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ORIGINAL COMMUNICATIONS.

OBSERVATIONS ON CLEFT PALATE; WITH CASES ILLUSTRATING THE NEW OPERATION OF STAPHYLORAPHY.

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(Concluded from page 27 of last Number.)

THE following cases illustrate many of the general observations already made, and afford evidence of the utility of the practice inculcated.

CASE I. D. P., æt. 17. The details of this case are given in vol. xxvii. of the *Medico-Chirurgical Transactions*. Since that publication, I have repeatedly seen this gentleman, in whom the benefit of the operation has been more strikingly evinced than in any other of my patients. This I attribute, in a great measure, to his zeal in the study of elocution.

CASE II. Miss W., æt. 18. The particulars of this case also are given in the volume above referred to. The improvement in speech, since the operation, has not been remarkable. The palate itself has been rendered more perfect than in the preceding case; but, from timidity or want of energy, the lady has taken little or no advantage of the improved condition of the parts.

CASE III. G. D., æt. 18. The fissure extended through the soft, and the greater portion of the hard palate; and the soft parts were so narrow, that I hesitated in recommending an operation. On the 4th of January, 1845, I operated on the patient: in addition to making the incisions devised by myself, I dissected the soft tissues on each side of the hard palate from this part of the fissure, in accordance with the directions of Dr. J. M. Warren; and, by this proceeding, was enabled to close the whole gap at once. Sloughing took place throughout the greater extent of the junction; and, on the fifth day, the fissure was wider than ever, the margins on each side, between the stitches, having given way. The operation was a complete failure; and I attribute this result to the ligatures having been placed too near to each other, and drawn too tight, so that sufficient circulation was not permitted.

Case iv. J. T., æt. 23. This patient was sent to me by Mr. Tuson, of the Middlesex hospital. That gentleman had operated three times upon the case, in accordance with the practice of Roux, but without success. A narrow point of junction had been gained about the middle, which, by the movements of the sides, had become gradually elongated, so as to resemble a piece of thread, three-fourths of an inch in length, stretched between the two sides of the fissure. The cleft had originally been limited to the soft palate; and, although the margins had been three times pared, they still seemed sufficiently broad to sanction the hope of success from my own proceeding. On the 23rd of April, 1845, I operated; and the union was perfect throughout, with the exception of a small aperture in front, a little larger than might admit the point of a probe. In paring the edges, I left the transverse band untouched; but came so close upon its roots at each side, that it could not afterwards be recognized.

Case v. S. S., æt. 22. The fissure extended through the soft palate, and nearly one-half of the hard. On the 8th of May, 1845, the soft parts were brought together, and the union was, in due time, complete. Three weeks afterwards, the soft structures were dissected from the hard palate, and brought together in the middle. On the third day, when the stitches were removed, the union seemed perfect; but in two days more the junction opened; and, ere long, as the soft parts became united to the bones, the orifice was as wide as ever. The union of the soft velum remained perfect.

Case vi. W. F. G., æt. 24. The extent of the fissure was about the same as in the last case; and the soft parts were thin, narrow, and remarkably mobile. The operation was performed on the 8th of October, 1845. The spasm of the muscles, when the parts were touched, was so great, that the preliminary incisions were not so fully carried out as I desired; nevertheless, union took place throughout the whole extent of the soft palate. An oval hole remained in front, where, owing to the flatness of the osseous roof, it was not deemed advisable to attempt an operation. An obturator was afterwards applied by Mr. Saunders, with the result of obviously improving the articulation.

Case vii. J. B., æt. 11, had a fissure in the soft parts only. The patient and his friends were particularly anxious that an operation should be performed. Although fearful that the boy might not keep sufficiently quiet, I trusted, on this occasion, to his assurance that he would. He kept his word; and the proceedings were most satisfactorily accomplished. On the second day, union seemed perfect, and I removed the stitches; but during the subsequent night, the whole separated, and the gap was as wide as ever. I attribute the failure in this case chiefly to the removal of the stitches at too early a period. Probably, during sleep, or in taking food, the parts had been overstretched, and the delicate adhesions had given way.

Case viii. G. B., æt. 16. The fissure extended through the soft, and the greater portion of the hard palate. An operation, limited to the soft palate, was performed on the 16th October, 1845, with complete success. An obturator was afterwards adapted to the opening, and the improvement in voice and speech was very satisfactory. This patient, like most others similarly affected, had a hare-lip when born,

which had been operated on in early life; the malformation was, however, still very marked. Another operation was performed some months after that on the palate, with the effect of greatly improving both the speech and appearance. Mr. Saunders, who constructed the obturator, tells me that he has recently seen this gentleman in consequence of some modification of the apparatus being requisite, and that the result of our conjoint proceedings is all that could be desired.

Case ix. C. T., æt. 16, had a fissure limited to the soft palate. A completely successful operation was performed on the 8th of December, 1845. This patient was brought by Mr. T. A. Richards, of Green-terrace, Camberwell, to my friend Mr. S. Lane, of Grosvenor-place, who, knowing my interest in such cases, kindly placed her under my care. I had the advantage of being assisted in the operation by both of these gentlemen.

Case x. W., æt. 26. The cleft extended through the soft parts only. The operation was performed on the 1st of March, 1846, and was followed by complete union, excepting in the two portions of the uvula, which were subsequently united by paring their edges, and retaining them in apposition by a single stitch. The non-union, at first, of the two parts of the uvula, I attribute to the soft parts dropping so much upon the root of the tongue, as to be disturbed by the movements of that organ. The voice and speech were soon remarkably improved in this case.

Case xi. T. S., æt. 26, had a cleft extending through the soft, and one-half of the hard, palate. The operation was performed on the soft parts, 28th October, 1846, and was followed by perfect union. An obturator was used to fill the aperture in front, from which great improvement in voice and speech resulted.

Case xii. J. M., æt. 18, had a wide fissure in the soft palate. An operation had been performed some months previously, on the old plan, which had completely failed. My own process was resorted to, March 24th, 1848, with perfect success. The intellect of this patient was not of the brightest kind; and, although some improvement in the tone of the voice was perceptible, there was little amendment in his speech when he was last seen, some months after the operation.

Case xiii. J. H., æt. 16. The fissure was limited to the soft velum. The operation was performed on the 8th August, 1848; and the union was perfect. The voice was considerably improved; but the patient left town too soon to permit a judgment to be formed regarding his speech.

Case xiv. T., æt. 29, had a very wide fissure in the soft palate, extending also through about three-quarters of an inch of the hard; the soft parts were very narrow and mobile. An operation was performed, 20th September, 1848, in which the soft structures were dissected from the bones, and brought together in the mesial line. The soft velum united satisfactorily, but the uvula remained split, seemingly for the reason stated in Case x: a small slough formed in the tissues dissected from the bones, in the site of one of the stitches, and an aperture remained in this situation. I am still in doubt whether it will be preferable to apply an obturator here, or to repeat the operation, in order to close the circular opening now remaining. My friend, Mr. Henry Lee,

did me the honour, two years previously, to submit the case for my opinion, when I advised that an operation should not be performed. I was led to this decision by considering that there was little probability of the parts being united in a satisfactory manner. Moreover, the patient spoke so remarkably well (under the circumstances), that there seemed no great hope of improvement, even were the operation successful; and, in addition, I was of opinion that no improvement in hearing would result. This patient, like many others with this malformation, was very deaf, and more desirous of relief in this respect than as regarded the palate or speech. She assented at the time to the opinion given; but, after the lapse of two years, having still a hope of her hearing being improved, determined to have the operation performed on her palate. Mr. Lee again desired that I should see her; and, after my explanation had been given as to the probability of a failure, she requested that an operation might be performed. I undertook the proceeding with great reluctance, but did every thing in my power to ensure success. Contrary to my expectations, union took place as above narrated; and I have now no doubt, that after joining the two portions of the uvula, (a proceeding which may be considered as almost certain of success,) and the adaptation of an obturator, should that be preferred, there will be considerable improvement. The patient has not yet returned to town to have the roof of the mouth made perfect; and I am unable to say how far her hearing has been benefited. She fancied, within a fortnight after the operation, that there was an improvement; but I have little hope of her being able to dispense with the use of an ear-trumpet.

Case xv. M. G., æt. 18, had a cleft extending through the soft palate, and about half an inch of the hard. In the operation, which was performed on the 16th October, 1848, an attempt was made to close the aperture in the bones, as well as behind; but a portion of one side sloughed, and the soft velum alone was permanently closed. A plug of caoutchouc was subsequently fitted to the aperture; and when I last saw the patient, (a few days ago,) her voice was greatly improved.

It may thus be observed, that, out of fifteen cases, I have been successful in closing the soft palate in thirteen. One of the cases of failure was the third in which my own peculiar practice was employed. It was a most unfavourable example, and one which, in all probability, would not have admitted of any remedy by the ordinary plan. Probably I should not now attempt an operation under such circumstances.

In addition to these cases, I have permission to refer to others which have been treated in accordance with my views.

Case xvi. G. L., æt. 20, who had a simple fissure in the soft parts, was operated upon in King's College Hospital, by my colleague Mr. Partridge, in August, 1845. There was only partial union in the first instance; but a second operation, some months afterwards, closed the gap nearly through its whole extent.

Case xvii. G. L. R., æt. 18, had a simple fissure in the soft parts, and was operated on successfully, in King's College Hospital, in January, 1846, by my then colleague, Mr. Simon.

Several friends have kindly favoured me with accounts of cases which

they have treated in a similar manner; and the particulars are here subjoined, exactly as they have been furnished to me.

Case xviii. Mr. Bowman writes thus:—"My dear Fergusson,—The case of Staphyloraphy, of which you wish a short account, was that of a young medical man, now practising in the south of England, upon whom I operated twice; at first unsuccessfully, according to M. Roux's method, and without lateral incisions; but afterwards with a successful result, after making the divisions of muscles, as you recommend.

"The fissure extended through the whole of the soft palate, coming quite up to the bone.

"On the first occasion, I think in 1842, I simply pared the edges and brought them together, and enjoined him not to swallow till the third day; in this respect adopting the views of the distinguished French surgeon, some of whose operations I had previously witnessed in Paris, and one in London. During two days, the stomach was much disturbed with repeated vomiting; and though the wound appeared to be agglutinated when the stitches were removed on the fourth day, ulceration gradually extended from the top to the bottom, and the whole parted asunder, to my great regret.

"In 1845, after the publication of your views on this subject, this gentleman again applied to me, and expressed a strong desire that I should make another attempt to procure union. I had already made up my mind to adopt, on the next opportunity, your proposal with regard to the preliminary section of the muscles, and also to give food on at least the second day, if not earlier. I accordingly noticed the situations in which the lateral halves of the palate were dragged, during his efforts at movement in the throat, while the mouth was open, and with your well-contrived knife made the requisite division, I suppose, of the levator palati on each side, with the immediate effect of causing the flaps to hang more loosely towards the median line. I then passed three ligatures. This was at ten A.M., and he had previously had his usual breakfast. He thought he could easily manage without food till the next morning, and accordingly took none; but I was then sorry to find him suffering again from repeated vomiting, with severe sick headache, to which he was liable, and I was almost ready to abandon hope. I gave him a small dose of calomel, and some beef tea; the vomiting recurred seven or eight times during the day, but left him towards evening, and did not return. He assured me that neither the effort of vomiting, nor that of swallowing, caused any dragging upon the threads, as far as he could judge from his sensations. To be brief, these apparently untoward circumstances had no injurious effect on the process of union, which seemed to take place as perfectly as possible, and in the whole extent, except a minute space next the hard palate, where a kind of pin-hole remained and still exists, but without any bad influence on his voice.

"Since the operation, his voice has considerably improved; but he has still some peculiarity and indistinctness of utterance, which will probably now be permanent, as it has resisted the efforts of a well-known teacher of elocution to overcome it.

"You ask me for my opinion of the anatomical grounds on which you have founded your improved method of performing staphyloraphy.

I think them in all respects sound, and likely to stand the test of experience; at least I intend to operate according to the plan you have so ingeniously framed upon them, when opportunities present themselves. —Believe me most sincerely yours, W. Bowman."

"14 Golden-square, Nov. 23, 1848."

I had the honour of assisting Mr. Bowman in the operation which he first performed, and cannot speak too highly of the able manner in which it was conducted. There appeared to be, at the time, every prospect of success.

My friend and former pupil, Mr. Robert R. Storks, has given me the following interesting narrative:—

Case xix. "M. J., æt. 20, applied to me in June, 1846, for relief from congenital fissure of the soft palate, which, on examination, presented the following appearances:—The fissure extended directly in the mesial line, from the posterior edge of the horizontal plates of the palate bones to the extremity of the uvula, which was divided into two nearly symmetrical halves. The flaps on either side were ample, and during deglutition lay almost in apposition, but, on irritating the fauces, they were drawn powerfully upwards and outwards, and were with difficulty distinguished from the surrounding mucous membrane. Her articulation was very imperfect; and, during mastication, particles of food passed into the posterior nares, occasioning great distress.

On June 21st, Staphyloraphy, after the method recommended by Mr. Fergusson, was performed, the levator palati on each side being divided. After the division of these muscles, the flaps were nearly in apposition, although there had been considerable loss of substance from the paring of the edges of the fissure; nor could I excite, on either side, any contraction by irritating the parts with the finger. As no other muscular fibres appeared in this case to exercise any influence opposed to the union of the parts, I did not interfere with either the palato-glossi or palato-pharyngei muscles. Four stitches were required to bring the parts together; one of which I removed on the second, the remaining three on the third day, after the operation. Beef tea and wine were allowed after the first twenty-four hours had elapsed. On the fourth day she had a severe attack of sore throat, accompanied with ulceration and erythematous redness over the palate; on the fifth day it was subsiding; and it was, after a week, difficult to say that an operation had ever been performed. It would be out of place for me to make any observations upon the case here narrated; but I cannot refrain from bearing my unbiassed testimony in favour of the views laid before the profession by Mr. Fergusson, in the *Medico-Chirurgical Transactions*. Having had opportunities of witnessing the performance of the old operation, in the hands of some of the most eminent surgeons of the day, including its originator, M. Roux; and subsequently, through the kindness of Mr. Fergusson, having examined his preparation and assisted him in many of his operations, I cannot too strongly express the opinion, that in my humble judgment, the relief of the lamentable deficiency it is proposed to remedy, is, by the latter proceeding (assuming that the soft parts are sufficiently ample to meet in the mesial line), rendered as certain of success as the operation for hare-lip. The passive condition to which the parts are reduced, by the division of the

muscular fibres, the effusion of lymph above the palate, acting as a splint and rendering motion impracticable, combined with the greater amplitude given to the soft parts by the partial and temporary destruction of their arched form, may be enumerated as perhaps the principal advantages of this proceeding. In addition, the paralyzed condition of the muscles influencing the wound, enables the surgeon to allow the patient food at a much earlier period than after the old operation,—a matter of no slight importance in some constitutions. Two things are essentially necessary before any individual is competent to give an opinion upon this subject: 1st. That he should have seen and carefully examined the preparation upon which Mr. Fergusson founds his views; and 2ndly. That he should have witnessed the performance of the operation in good hands. The instruments necessary are few and simple; but they require that, for the absence of which no mechanical ingenuity will compensate—delicate manipulation. I had another opportunity of partially putting into practice this operation in a very difficult case, in which the plan was as successful as I could anticipate:—A female had been left, after syphilitic ulceration, with an aperture in the soft palate, admitting my fore-finger. By means of the knife recommended by Mr. Fergusson, I was enabled to divide the levatores palati nearly to their required extent; the edges were pared, the aperture being made, by the incision, elliptical rather than circular, and the parts brought together. The wound united except at one point, into which, when cicatrization was complete, I could only introduce the ordinary drawing pencil. The proceedings afforded the patient great relief; but circumstances prevented me from following out the case, and I have consequently been unable to remedy the existing deficiency."

Mr. Storks gratified me by asking my assistance in the first of the above cases; and, in my opinion, the operation could not have had greater justice done to it. It is with me, as with all others who have the pleasure of that gentleman's acquaintance, a matter of deep regret, that a young surgeon of such promise should be prevented, by ill health, from following a profession in which he has already so ably distinguished himself.

Case xx. My friend Mr. Quain thus writes to me:—

"Keppel Street, 20th Nov. 1848.

"My dear Sir,—After having carefully examined the preparation which you kindly showed me, as well as an imperfect one in the Museum of University College, I became so well satisfied of your suggestion, respecting the division of certain muscles being likely to prove a real improvement in the operation for cleft palate, that I resolved to put it in practice on the first opportunity. Accordingly, in operating on a young lad a short time ago, I made the preliminary sections which you recommend, and the case has been completely successful. I look upon your addition to the operation in question, as a very happy application of the plan of dividing muscles, now so advantageously resorted to in some other cases.—I am, my dear sir, faithfully yours, R. Quain."

"Prof. Fergusson."

In a visit to University College hospital, shortly after the above date, I had the satisfaction of seeing the patient, who was about to pass from under Mr. Quain's immediate notice.

Case xxi. My friend Mr. Avery has given me the following particulars:—"Mr. Haddock, æt. 22, a stout, healthy-looking, young farmer from Sutton, in Cambridgeshire, came to me in March last, with cleft palate. It commenced half an inch behind the hard palate, and extended exactly through the middle of the soft palate and uvula. On irritating the parts sharply, both flaps almost entirely disappeared against the sides of the fauces; but when he swallowed, they met at the mesial line. The operation was performed on the 20th of May, according to the description given in your paper, and the suggestions you were kind enough to make, when you showed me the preparation of the dissection in your possession. The edges were freshened with great facility by transfixing the flaps, at about a line from their edges, with a small pointed bistoury. The division of the levator palati was so free, that the round extremity of your curved knife could be seen moving above the mucous membrane lining the under surface of the palate, just as the tenotomy knife is seen under the integuments, in the division of tendons. The palato-pharyngeus was also freely divided with a bistoury and curved scissors. Although the motions of the flaps were not entirely destroyed, it was quite clear to all present that they were very greatly diminished, particularly at the posterior part of the palate and uvula; and that, *comparatively*, the flaps could be held and drawn down, like a piece of loose integument. Five different coloured sutures were passed, beginning from before and proceeding backwards, and afterwards tied in the same order. Very little movement of the soft palate could then be produced by irritating the parts sharply, and it lay almost *flat* and loose over the tongue, instead of being *arched*. He had beef tea, gruel, and a little sherry, on and from the first day; and, which was very grateful to him, he was allowed to sip a little thin gruel whenever he liked; besides this, he had an enema of beef tea, with a glass of sherry in it, every night and morning. After forty-eight hours the first and third sutures were removed; on the third day, the fifth; on the fifth day, the second; and on the sixth, the fourth and last. He suffered neither constitutional disturbance nor distress; and his pulse was never above 65. Small ulcerated spots only remained where the sutures had been. They soon all closed, excepting one. On the tenth day he had meat and porter; on the following day he went about London, and on the twelfth returned home, with a small superficial unclosed spot remaining. I saw him six months afterwards, and found him a much smarter man; he had married, and his pronunciation was quite distinct, although much of the nasal twang remained."

Case xxii. Mr. Avery also writes:—"Very soon after, I assisted Mr. Yearsley in a case so precisely similar to the above, that there is scarcely an observation to add to it. Mr. Yearsley had seen the operation performed upon Haddock; and the treatment employed, and the result, induced him to follow the same plan in every particular. The age of the patient, the state of his health and strength, the time of cure and termination, were, as nearly as could be, the same. After witnessing these two cases, which were so completely successful, where your method was adopted, and having seen the operation performed by M. Roux, and others, in Paris, and by surgeons of the highest eminence in London, where other methods were followed, with total failure or

only partial success,—I think it is but justice to place the happy result to the score of the great improvement you have introduced, by the division, more particularly, of the levator palati muscle. By that division the adverse action of the muscles is greatly diminished, and the flaps are cut in such a manner that they fall by their own weight almost *flat* over the tongue, instead of being held up tightly in an arched form by the upper surface of the soft palate; and I cannot help thinking, that when well performed, and in favourable cases, the success of this operation will be, for the future, the rule instead of the exception. I tried every variety of complicated instruments on the subject, before the operation, but can testify that the very simple means you use and have described to me are incomparably easier of application, and more effective, than any I have seen."

Both of the gentlemen who treated these cases, politely afforded me an opportunity of seeing the patients; and in each, I felt satisfied that my views had had justice done to them.

Case xxiii. Mr. Skey, of St. Bartholomew's Hospital, has informed me of a successful example occurring in his private practice.

Case xxiv. Mr. Shaw, of the Middlesex Hospital, tried the method in a case which came under his care in that institution. The proceeding was unsuccessful,—a result at which I was not astonished; for the condition of the parts was by no means favourable for any operation.

Thus, then, it will be observed, that out of twenty-four cases, in which the practice recommended by me has been put into execution, it has proved of advantage in twenty-one. Many of these were most unfavourable instances; and, in three of the successful cases, the ordinary operations had already failed.

16, George Street, Hanover Square, Jan. 1849.

AN ACCOUNT OF SOME EXPERIMENTS ON THE REMEDIAL ACTION OF ELECTRICITY.

By H. BENCE JONES, M.D., F.R.S., Physician to St. George's Hospital.

The report on the Treatment of Diseases by Electricity in the Guy's Hospital Reports for 1841, by Dr. Golding Bird, is so full, and the lectures which he delivered at the College of Physicians in 1847, represent his results as so favourable, that I have many doubts whether the opposite estimate of its value, to which my own experiments have led me, may not be owing, either to some defect in the mode of applying the remedy, or, which is more probable, to a too limited experience of its effects.

Whatever the cause of the difference may be, a short statement of the results, which were obtained in St. George's hospital, may assist other experimentors in arriving at the truth regarding the influence of electricity in the cure of disease.

In 1843, Dr. Seymour, who had great confidence in the value of electricity as a remedial agent, applied to the weekly board of St. George's hospital, to appoint one of the senior pupils to take charge of the electrical apparatus, and of the application thereof. This had hitherto been for years left entirely to the care of the surgery-man. Dr. Thomas

Chambers and I were appointed; and, as I was anxious to make some experiments on this subject, we agreed to record the most interesting cases, and to apply the electricity ourselves for a year.

At first a plate machine and Leyden jar were used; but, for at least two-thirds of the cases, the magneto-galvanic apparatus, made by Kemp, of Edinburgh, was alone employed.

The patients were electrified according to the orders of the physicians or surgeons, some daily, some thrice, some twice a week. The galvanic electricity was usually continued from six to ten minutes, rarely to fifteen minutes, according as the patients could bear its application.

The number of the cases thought fit to be recorded were twenty-three. Those may be thus arranged:

Diseases.	Number of cases.	Results.		
Paraplegia	3 cases.	3 no benefit.		
Hemiplegia	6 cases.	4 no benefit.	2 slight benefit.	
Lead Palsy	3 cases.			3 good.
Wasting of the Deltoid	2 cases.	2 no benefit.		
Paralysis of one arm or hand.	6 cases.	3 no benefit.	2 slight benefit.	1 rapid gain.
Chorea	1 case.		1 slight gain.	
Pain in the Sacrum	1 case.	1 no benefit.		
Paralysis of the Bladder....	1 case.		1 slight benefit.	
	23 cases.	13 no benefit.	6 slight benefit.	4 good gain.

Closer examination of these cases will not make the influence of electricity appear at all more favourable.

I. Cases which improved.

The history of the patient who improved most rapidly, was as follows: A cabman, forty-five years old, left the hospital five weeks previously, using a crutch, having had his leg broken. A few days after he went out, he perceived a tingling deadness in the fingers, and in ten days he had lost the use of the wrist and fingers, so far as to be unable to put on his hat, or tie his handkerchief. He had now left off his crutch for ten days, but without any benefit. His health is quite good.

To be electrified three times a week in the left arm.

After one application of the electricity, he was able to tie his handkerchief, and the numbness of the hand was much diminished. He came only once more to be electrified, after which he continued to improve rapidly without any remedy.

Of the three cases of lead palsy that improved, one received benefit from electricity, after rest had been fully tried without effect. Another had the influence of the electrical treatment tested in the following way:—

He had lost the power over both hands for three months. The right hand was the worst. The left hand was put on a splint for a month, while, at the same time, the right was galvanized every other day. At the end of the month, the right hand was still the worst, but the difference between the two hands was not so great as formerly. The splint was then left off the left hand. When it had been off ten days, he stated that the right hand was more improved than the left; he was then able to use both hands in dressing, and to feed himself with the right one, which alone was still electrified. In another fortnight, he left the house, having taken the balsam of Peru during the two months he was an in-patient.

In this case, the worst hand, being electrified, gained in power more rapidly than the best hand, which was kept on a splint; and when both were free, and one electrified, that one most quickly improved.

The six cases that improved slightly, present little worthy of notice. The improvement was so slight, that it was very doubtful whether it were owing to the treatment.

One of the cases of loss of power of the arm is worth mentioning, as in it the power of the shock to produce ecchymosis was very distinctly shewn.

A woman, twenty-six years old, thirteen months previous to her admission, fell on the left hand. The hand soon after swelled, and in three or four days she was unable to raise it. She gradually got much better, but some dead bone was removed from the palm of the hand.

For the last four months she has been losing power in her arm. She is now unable to lift her arm at all, and the hand is swelled. The catemenia are regular, and her health is tolerably good.

Galvanic electricity was used to the fore-arm and wrist: for the first few days she thought she had more power over the fingers, but was still quite unable to lift the arm. More powerful treatment was used, but considerable œdema and ecchymosis of the fore-arm and wrist rendered it necessary to discontinue the galvanism. It was a month before the ecchymosis was removed. The œdema continued. As she still declared that the galvanism had benefited her, it was resumed, and in four days the ecchymosis was again produced. The treatment was continued, with less power, for three weeks, when she left the hospital but little improved.

II. Cases which did not improve.

The cases in which no benefit was derived from the electricity, formed much the largest class; and, in some of these cases, I was much disappointed in finding no gain at all from the treatment. The following case shows that little benefit must be expected from electricity in hastening the recovery of power after hemiplegia.

A conductor of an omnibus, 30 years old, had pain in the head for a month, chiefly over the eyes, and indistinctness of sight for two weeks; when suddenly, without any loss of consciousness at first, he became palsied on the right side, seventeen weeks before his admission into the hospital. Shortly after the palsy came on, he says he was stupified; and that the mouth was at first drawn to the right side. When admitted, he was improving. Galvanism was ordered to be applied to the muscles of the arm, and from the cervical plexus to the extremities of the fingers. He was electrified every day for twenty-five days, with five exceptions. During this time, the leg which was not electrified became stronger, and he was able to walk far better than on his admission. The arm was not at all better when he left the house than it was when he was admitted.

I regret that the experiments which were made do not bear at all on the question at issue between Dr. Marshall Hall and Dr. Todd. The magneto-electrical power was used as strong as it could be borne by the patient; and the motion of the muscles was only observed as a test of the degree of power that could be applied. The two following cases of paraplegia shew that, when the greatest power was employed, the paralyzed limbs were not thrown into action.

Elizabeth Gray, æt. 13, whose general health was very good, had had paralysis of the lower limbs since she was sixteen months old, chiefly affecting the right leg. Sensation did not appear to be at all diminished. She was ordered to be electrified three times a-week, the right leg only being acted on, in order to test the treatment. At the end of a month, no benefit having been obtained, both legs were electrified. At the end of two months no benefit resulted, the utmost force of the machine being unable to produce any motion in the muscles of the right leg. The health was quite good. At the end of the third month she left the hospital, without having received any benefit. Tincture of cantharides, and ergot of rye, were each administered in full doses; the first for a month, the latter for a fortnight, without any appreciable effect.

Ann Tolman, æt. 40, a very hysterical ladies' maid, admitted May 17, 1843. On July 27, I received the following account: She says that she awoke about four months ago, having been quite well previously, with loss of the use of the legs, arms, and muscles of the neck. Her hands and feet were so tender, that she could hardly bear them to be washed. The loss of power, and increase of sensibility, were worse at first in the hands than in the feet. She has recovered the use of the neck and the hands, so as to work a little with the needle. She has very little power of motion of the legs; the right one is rather more moveable than the left. There is some loss of sensation in the legs; for when she does not see it, they can be touched without her feeling it; but she screams when she sees that any attempt is made to touch her or move her. She says it does not hurt her when the legs are touched, but "it makes her feel a sort of terror, and then she screams."

The legs are both flexed, and strongly contracted, and the feet turned down; but she says that, at one time, they were quite straight, and so stiff, that she could not bend them. They cannot now be straightened.

On the first day, the electricity was applied from the thighs to the toes; and it appeared to make no impression whatever, even when full power was used. That is, I could not make out that there was any difference, whether the sponges, by which contact with the body was made, were attached to the machine or not. Attached, or unattached, she complained excessively of the pressure of the sponges, whether pressed lightly or firmly; but she did not at all complain of any more pain when the electricity was applied, and there was no starting of the limbs as contact was made and broken. In the right leg alone, a little quivering of the muscles, during the treatment, could be seen.

The second day the electricity was passed from the spine to the toes; high up in the neck, and low down on the sacrum. Still I could not satisfy myself that she felt anything of the electricity, although she complained excessively of the pressure.

When the electricity was applied to the arm, she felt it; and the movement of the limb also showed that she did so, beyond mistake.

For five weeks the electricity was continued. The power of the arms increased without their being electrified, and the power of the legs was also rather better; but I do not believe that this was due to the electricity. In consequence of some misconduct she was then sent out of the house.

These are the most interesting of the cases I observed. At the end

of eleven months, I reported to the weekly board the unsatisfactory conclusion of the experiments we had made. During that period, I am certain that the remedy was fairly tried on a small number of patients. If it had been more fully tried, I might, perhaps, have formed a higher estimate of the influence of galvanism in the cure of disease. But in twenty-three of the recorded cases, there was only one slight case, in which the improvement from the treatment was rapid; and only three others, in which I was satisfied that benefit was slowly derived from it. These three were all cases of paralysis from lead.

ON LARYNGOTOMY, AND TRACHEOTOMY, IN ACUTE AFFECTIONS OF THE LARYNX.

By PRESCOTT HEWETT, Esq., Assistant-Surgeon to St. George's Hospital, and Lecturer on Anatomy.

In Acute Affections of the Larynx, the surgeon is sometimes suddenly called upon to make an opening into some part of the air-passages, in order to relieve the urgent dyspnœa which has supervened.

Laying aside all considerations about the medical treatment of these cases, my intention is to examine solely the merits of the two operations, Laryngotomy and Tracheotomy, by which it is usually sought to afford this relief.

Of the two operations, that in the trachea is the one selected by most surgeons of the present day. In the following observations, however, I shall endeavour to prove that, not only is this preference not founded on just grounds, but that it would be advisable, in such cases, to make the opening in the crico-thyroid region.

Acute affections of the larynx, terminating in effusion, present, it is well known, a very great difference in the adult and in the child; the effusion, in the former, taking place by far most frequently in the sub-mucous tissue; whereas, in the latter, it is usually poured out on the free surface of the mucous membrane. In these cases, in the adult, the effusion is purely laryngeal; in the child, it is, most frequently, not only laryngeal, but also tracheal.

This marked difference in the localities of the effusion, at these two periods of life, at once points out two great divisions, in which the surgical treatment will necessarily be very different. My intention is to confine, for the present, these remarks to one of the divisions only, that of the adult period.

Effusions in the sub-mucous tissue of the larynx, it matters not of what kind, or how produced, are strictly limited to the parts above the rima glottidis. This fact, already pointed out by several pathologists, has not, I think, been sufficiently dwelt upon by practical surgeons.

That the effusion is thus invariably limited to this region, may be proved by morbid anatomy, by experiments, and by the anatomical structure of the parts. In the following cases, especial notice was paid to the limits of the disease, at the post-mortem examinations, some of which were made several years ago.

A man, æt. 50, was attacked with diffuse cellular inflammation of the scalp, after an injury of the head. The inflammation subsequently spread to the head and neck; urgent dyspnœa suddenly supervened, and he died. A quantity of yellow-coloured serum and lymph was found in the cellular tissue of the neck, and both aryteno-epiglottic ligaments were much thickened by effusion of serum in their sub-mucous tissue. The disease had not spread beyond this part of the larynx.

A woman, æt. 39, suffering from a violent attack of sore throat, was suddenly seized, in the night, with urgent dyspnœa, and died. Besides the marks of inflammation about the throat, the sub-mucous cellular tissue of the epiglottis, aryteno-epiglottic ligaments, and ventricles of the larynx, was much inflamed, and infiltrated with a large quantity of recently effused lymph. The mucous membrane itself was inflamed, and several small ulcerations were found in the region of the aryteno-epiglottic ligaments. The mucous membrane of the trachea was much increased in vascularity; but the effusion of lymph was strictly limited to the parts above the inferior chordæ vocales.

A man, æt. 65, died with symptoms of suffocation, having been affected with diffuse inflammation of the head and neck, following an injury of the head. The laryngeal mucous membrane of the epiglottis was of a brilliant scarlet colour; increased vascularity also existed about the mucous membrane of the larynx itself, and there was slight œdema of the aryteno-epiglottic ligaments. The mucous membrane of the trachea was, throughout, of its natural colour and thickness.

A man, æt. 45, died of extensive inflammation of the cellular tissue about the neck. The epiglottis and aryteno-epiglottic ligaments were very much thickened, by an effusion of lymph and pus in their sub-mucous tissue: this effusion extended as low as the upper margins of the inferior vocal chords, and there it suddenly ceased. The parts below this point were quite healthy.

A man, æt. 53, admitted into the hospital with a scalp wound, subsequently died of diffuse inflammation of the head and neck. The sub-mucous tissue of the left aryteno-epiglottic ligament, was much thickened by infiltration of serum. All the other parts of the air passages were quite healthy, with the exception of some slight vascularity of the mucous membrane.

In a man, æt. 55, who died of diffuse cellular inflammation of the neck, a large quantity of lymph was found in the sub-mucous tissue of the left aryteno-epiglottic ligament, and left superior chorda vocalis; but there was no diseased appearance on the opposite side. The sacculi of the larynx were quite healthy, and the mucous membrane of the trachea presented only a slight increase of vascularity.

A woman, æt. 27, admitted into the hospital with nodes on the forehead, was suddenly attacked with violent sore throat; the inflammation spread rapidly to the neighbouring parts; urgent dyspnœa made its appearance, and she died. The mucous membrane of the soft palate and back part of the tongue was of a very dark colour, with extensive effusion of lymph in the sub-mucous tissue; these appearances were also very much marked in the glosso-epiglottic and aryteno-epiglottic ligaments. The mucous membrane of the trachea was increased

in vascularity, and its surface was covered with a thick tenacious mucus; but the membrane itself was not thickened, the effusion of lymph ceasing abruptly at the inferior vocal chords.

A man, æt. 28, was attacked with sore throat; erysipelas of the head and neck subsequently appeared, urgent dyspnœa supervened, and he died. The cellular tissue at the root of the tongue, that of the epiglottis, aryteno-epiglottic ligaments, and of all the parts above the inferior chordæ vocales, was extensively infiltrated with lymph and pus. The aperture of the glottis was all but blocked up by the thickened vocal chord. The mucous membrane of the larynx was in a sloughy state; that of the trachea was much increased in vascularity, but not in the least thickened.

A man, æt. 45, was attacked with sore throat; the inflammation spread to the neighbouring parts; violent paroxysms of dyspnœa supervened suddenly, and during one of these laryngotomy was performed, but he died thirty-six hours after the operation. The sub-mucous tissue at the root of the tongue, and of the glosso-epiglottic ligaments, was much thickened by a large quantity of recently effused lymph: the epiglottis and aryteno-epiglottic ligaments were also much thickened by a similar effusion. The cellular tissue of the larynx was thickened, and infiltrated with serum only. This thickening ceased abruptly at the margins of the inferior chordæ vocales, the parts below being simply congested and covered with mucus.

A man, æt. 31, who was in the hospital for enlarged cervical glands, was attacked with erysipelas of the head and neck; the tonsils became enlarged, urgent dyspnœa suddenly made its appearance, and he died. The sub-mucous laryngeal tissue of all the parts above the inferior vocal chords, was extensively thickened and œdematous; and the disease was strictly limited to these parts, the mucous membrane of the trachea being healthy.

The appearances above related were the same in several other post-mortem examinations, the details of which I think it quite unnecessary to give here. In all of them, whatever may have been the state of thickening above the inferior vocal chords, these chords themselves presented their well defined, sharp margins, and, in many instances, their glistening appearance, the mucous membrane covering them not being in the slightest degree affected. In none of the cases, was the mucous membrane of the trachea thickened.

That such are the precise limits of the effusion, in most cases of acute affections of the larynx at the adult age, can also be proved by some very simple experiments. If a larynx and trachea be removed and kept in water for some little time, the cellular tissue of all the parts above the inferior chords will become œdematous and swollen, whereas, the parts below these chords will retain their usual appearance, the chords themselves presenting, in all cases, their well known glistening appearance. So, too, if either water or air be injected into the cellular tissue of the larynx, it will be found not to pass beyond the upper margins of the inferior chords; further than this spot, it cannot be forced downwards.

The explanation of this limitation is easily found in the anatomical structure of the larynx and trachea. Above the inferior vocal chords, the mucous membrane is connected to the subjacent parts by means of

a loose cellular tissue, which is very abundant, especially in the region of the aryteno-epiglottic ligaments, whereas the connections of the mucous membrane lining these chords, and the trachea, are very firm; the cellular tissue here, being very short and very dense, forms so firm a bond of union, that it is difficult to separate the mucous membrane from the parts lying below it.

The late Mr. Liston, who was a staunch advocate for the operation of tracheotomy in most affections of the larynx, where an operation was required, admitted, in some observations published in the *Lancet* of 1844, "that the high operation in the crico-thyroid membrane, laryngotomy in fact, might answer in cases where there is obstruction in the rima glottidis, as where swelling has followed a scald of the glottis." The admission thus made by Mr. Liston for these cases of accident, ought to be applied to most cases of acute laryngeal affections in the adult. After childhood, it is, comparatively speaking, very rare to find the obstruction any where but at the rima, or immediately above this region; it matters not whether the effusion has been preceded by an accident or not, its locality is precisely the same in both instances; it is limited in the one, as well as in the other, to the parts above the rima.

Although the effusion be above the rima, in practice it will be found, in most instances, that the obstruction for which the surgeon is called upon to operate is at the rima itself. The sudden and urgent dyspnœa, coming on in paroxysms, at once shows that this obstruction is caused by spasms of the muscles in this region. This too is proved by post-mortem examinations; for in many cases, where patients have died of sudden suffocation, the effusion has been so slight as to present little or no obstruction: certainly not sufficient to account for the symptoms. It is this spasmodic state which renders the operation of laryngotomy of so much value: coming on, as it does, so suddenly and violently, it demands that the relief be immediate: the opening in the air passages must, in many instances, to be of any avail, be made, as it were, instantaneously: tracheotomy, it is well known, cannot thus be performed with safety to the patient. A striking instance of this nature came under my notice some years back. A young woman, who was affected with extensive syphilitic ulceration of the throat, was suddenly one night attacked, no premonitory symptoms having been present, with most urgent dyspnœa; it was determined by the surgeon, who was close at hand, to perform tracheotomy; the operation was well done, but some little time was lost in making the opening in the wind-pipe, in consequence of some venous hæmorrhage, and the patient, who made a slight rally after the introduction of the canula, soon died. At the post-mortem examination, the larynx was found to be quite healthy; the urgent dyspnœa had been caused solely by spasm of the glottis, induced by the irritation which was going on in its immediate neighbourhood.

Many surgeons object, I know, to this operation of laryngotomy in acute diseases about this organ; they think it desirable that the opening should be made as far as possible from the seat of the inflammation, for fear of the canula becoming the cause of extension of the disease down the trachea. Such an objection it has, however, been shown, in the preceding observations, is not a valid one, inasmuch as

the effusion in these cases does not extend beyond the loose cellular tissue of the larynx. Supposing the canula to excite some inflammation, the mucous membrane would be very slightly thickened, and an effusion of lymph might take place on its free surface; but this might be caused if the canula were placed in the trachea, just as readily as when the opening is made in the larynx. A canula placed in the larynx is not, however, likely to cause inflammation of any consequence there. This point I have particularly noticed in several post-mortem examinations. In a larynx in which a canula had been kept in the crico-thyroid region for thirty-six hours before death, there were no traces whatsoever of inflammatory action in this spot, notwithstanding that there was an abundant effusion of sero-purulent fluid above the inferior vocal chords. In another larynx, where the canula had been kept in the same region for forty-eight hours, and under similar circumstances, there were no traces of inflammation produced by the presence of the tube; neither was there any inflammatory action produced by the canula in a third case, in which it had been kept in the crico-thyroid region for several days; the mucous membrane, with the exception of the margins of the wound, not being even discoloured.

In the preceding observations, reference has been made to laryngotomy in the adult only; but there is a class of cases occurring,—and that not unfrequently, among children,—in which this operation is equally valuable. I refer to those cases where the little patients have swallowed either acids, or, more commonly, boiling water. Here the limits of the disease are just as well defined: the effusion following the accident, being in the sub-mucous cellular tissue, is strictly limited to the parts above the inferior chordæ vocales, and morbid anatomy shows precisely the same state of things as that which occurs most frequently in the adult; the urgent dyspnœa is in the same manner produced, in a great measure, by spasm of the glottis. In this class of cases, it may, I think, be said that laryngotomy is even more valuable than it is in the adult, owing to the much greater difficulty which naturally exists, in laying open the wind-pipe of a child.

Having thus pointed out the exact nature of the disease in these affections of the larynx, if we now proceed to weigh the respective merits of the two operations which may be resorted to, we shall find that either of them will serve for the relief of the urgent and distressing symptoms which sometimes accompany these cases. On the one hand, however, we shall have an operation, laryngotomy, which may, in most instances, be performed with great ease, and, as it were, instantaneously; and, on the other, tracheotomy, an operation, the difficulties and dangers of which are such, that all experienced operators and practical writers have thought it advisable to dwell upon them strongly,—so strongly, indeed, that it will be quite unnecessary for me to recapitulate them.

Such being the case, I shall close these observations with the two following general rules:

In adults, laryngotomy is, in cases of acute affections of the larynx, to be preferred to tracheotomy.

In children, laryngotomy is also to be preferred in cases where the obstruction has come on after swallowing boiling water, acids, or any other irritating fluid.

ON THE INTESTINAL DISCHARGES IN CHOLERA.

By E. A. PARKES, M.D., Assistant-Physician to University College Hospital.

The chemical and microscopic examinations of the discharges from the alimentary mucous membrane, present certain difficulties, and are liable to certain fallacies, which do not occur in the investigation of the constitution of the urine. Whatever abnormal ingredients may exist in the urine, must have been derived from the blood, and have passed, with more or less change imposed upon them, through the secreting textures of the kidney or bladder. But the excretion from the intestinal mucous membrane is, in health, mixed with a mass of extraneous matter, such as the debris of food, the excrementitious portions of certain secretions, etc.; and, in disease, with the abnormal discharges induced by medicines, or even with the medicines themselves. In the case of severe Cholera, however, many of these possible difficulties and errors are avoided. The fæculent contents of the intestines are, at an early period of the disease, expelled; no solid food is taken, or, if taken, is ever tolerated by the stomach; the bile, and probably the pancreatic fluid, is retained; and there is no fear of urine mixing with the stools, for the kidneys are inactive. The Cholera dejections are therefore the products of the mucous membrane alone, with the possible addition of certain medicines, or of fluids, which, having remained on the stomach, and then passed into the intestines, have been discharged nearly unaltered.[1] In the following observations, I believe even these sources of error have been guarded against. In most of the cases I was aware of the treatment which had been employed; and if any fluid that I obtained, was found to contain an obviously extraneous and foreign ingredient, I did not make use of it.

The stools in Cholera, it need hardly be said, consist of two very distinct portions: of a colourless fluid, which is turbid, or, more usually, nearly clear, or perfectly transparent; and of a sediment, which is white, and of different physical characters, according to the period of the case. In several cases I have made analyses of the fluid, and have also made, or caused to be made, microscopic examinations of the sediment. In the following paper I shall first detail the chemical analyses of the supernatant fluid; and subsequently, the microscopic appearances of the cholera-masses in the same cases.

I. CHEMICAL EXAMINATION OF THE FLUID.

Two of these analyses were made by Dr. Garrod, the remainder by myself. I have shortened all details as much as possible; and have not included negative experiments, unless of an important kind. Although it has not been possible to analyze, as I desired, all the stools passed during the course of a single case, it will be seen that my observations embrace all periods of the illness in different cases, and indi-

[1] This seems to be the case with milk, which often is not rejected by the stomach, and then passes through the bowels so unchanged as not only to give the stool a milky appearance, and to present under the microscope multitudes of oil globules, but actually, after standing for some time, to form a kind of cream.

cate, with tolerable accuracy, the probable course of events in individual patients.

Observation 1. *First or second true rice-water stool of the algide stage, from a middle-aged man, who subsequently died.* Analyzed by Dr. Garrod.—The stool separated into two parts, on standing: *specific gravity* of the entire fluid, 1009.16 at 56° Fahr.; *specific gravity* of the clear fluid, 1009.40 at 53° Fahr.; or if the temperature be taken into account, about 1009.0; *reaction*, slightly alkaline, but well marked; *odour* peculiar, slightly fæculent.

Heated with a small quantity of *nitric acid*, the fluid acquired a pink tint, and a precipitate fell; a peculiar odour was developed;[1] there was no effervescence. Strong nitric acid destroyed the pink tint. The alcoholic extract gave the tint with nitric acid; showing, in this way also, that it could not be dependent on uric acid. On drying the watery extract, however, and exposing it to the vapour of ammonia, a pink colour again became evident, most probably from the formation of murexide. No urea could be detected. With *hydrochloric acid*, the purple tint, from the presence of a protein compound, was produced. *Acetic acid* gave a slight precipitate. There was none of the organic principle of the bile.

Composition.—Water		985·35
Solids		14·65
		1000·00
Albumen	2·40	
Other undetermined matters, including principle coloured by nitric acid, trace of uric acid, etc.	1·27	
Salts, phosphates, and chlorides,—the latter in excess . .	10·98	
	14·65	

Dr. Garrod remarks, that "the ash has nearly the same composition as that of the serum of the blood, the chlorides being greater in amount than the phosphates."

Observation 2.—*Stool passed by a man aged about* 50, *thirteen hours after the commencement of the attack, and six before death. Algide symptoms intense.*—The stool separated, on standing, into two parts. The supernatant fluid was perfectly watery and limpid, passing readily through fine filtering paper. *Reaction*, markedly alkaline; *odour*, peculiar, and faint,—perhaps slightly fæculent; *specific gravity*, 1009.5, at 49° Fahr.

The liquid became hazy by heat, and the peculiar odour was rendered more intense. A drop of *nitric acid* increased the turbidity; a few more drops considerably increased it, and produced a very faint, but decided violet, tint; a further addition of acid destroyed this colour, and gave a light yellow tinge. A tolerably copious precipitate fell. When acidulated with *acetic acid*, the yellow prussiate of potash, and the bichloride of mercury, both gave precipitates. The ash of the fluid was perfectly white; it effervesced with nitric acid; the solution of the salts was strongly alkaline. There was no urea, nor uric acid, in the fluid.

[1] Dr. Garrod compared this odour to that of butyric acid.

Composition.—Water			989·13
Solids			10·87
			1000·00
Coagulable organic matter,—probably albumen . . .		1·18	
Incoagulable organic matter, and a little phosphate of lime .		0·55	
Soluble Salts, viz.: Chlorides of sodium and potassium .	5·188		
——— Phosphate of soda . . .	1·059		
Other soluble salts, of which sulphate and carbonate of soda formed a part	2·893		
		9·14	
		10·87	

Observation 3.—*Last stool passed by a woman, aged* 28, *in the deep algide stage, six hours before death; cramps had been severe, but had nearly ceased.*—The whole stool was only ʒx in quantity. It separated into two parts: the fluid part was perfectly clear and watery. It was filtered through fine paper. *Reaction*, alkaline; *odour*, peculiar,—not at all fæculent; the *specific gravity* was not taken.

Boiling produced no change of colour. A drop of *nitric acid* produced a little decided effervescence; but no violet tint. A few more drops gave a flocculent precipitate; but there was no change of colour. A very peculiar odour was given off; and a gas was evidently disengaged, as it was now difficult to boil the liquid, on account of its occasional violent ebullition. The odour was certainly different from that of butyric acid, with which it was at the time compared. It was less sharp, and had more of a burnt odour. By adding nitric acid in excess, and boiling for some time, the odour disappeared, and the precipitate more completely separated itself. There was no uric acid. The ash of the fluid effervesced with nitric acid.

Composition.—Water			990·294
Solids			9·706
			1000 000
Organic matter (of which a large portion was albumen) and insoluble salts		2·186	
Soluble salts, viz.: Chlorides, phosphates, and sulphates .		7·520	
		9·706	

Observation 4.—*One of the last stools passed by a middle-aged man, in the deep algide stage, who subsequently died.* It had the usual physical appearance, and was alkaline.

Dr. Garrod was kind enough to examine it very carefully for urea, and uric acid, but could not detect the presence of either. The organic compound which gives the red or violet tint with heat, and nitric acid, was also absent. The stool contained, as usual, salts, and coagulable organic matter, but the quantities of these were not determined.

Observation 5.—*Either the 6th or 7th stool passed by a woman, aged* 23. *There were severe cramps at the time. The algide symptoms were well marked, but the patient ultimately recovered.*—The stool consisted of two parts, as usual. The fluid was thin, watery, and colourless, but not perfectly transparent. It was not filtered, but drawn off with a pipette.

Reaction, strongly alkaline; *odour*, peculiar, and very slightly fæculent; *specific gravity*, 1008.3, at 66° Fah.

With *heat*, a slight haziness occurred. A very small quantity of *nitric acid* added to the hot fluid, gave a very beautiful violet tint, which boiling for several minutes did not destroy. The addition of more nitric acid at once destroyed it, and the liquid assumed a slightly yellow tinge; a flocculent precipitate fell. The peculiar odour was given out as usual. The ash, but not the fluid, effervesced with nitric acid.

Composition.—Water		989·17
Solids		10·83
		1000·00
Coagulable organic matter	0·27	
Incoagulable organic matter and insoluble salts	2·23	
Soluble Salts, viz.: Chloride of sodium	4·013	
——— potassium	0·791	
——— phosphate of soda	0·326	
——— sulphate of soda	0·487	
Other soluble salts	2·713	
	8·33	
	10·83	

Observation 6. *A stool passed by a girl, aged* 11, *who had been much purged, and had vomited, and had had severe cramps. At the time she passed this stool, the pulse was imperceptible, or nearly so; the eyes were sunken, the surface was very cold, but there was comparatively little cyanotic tinge of the skin, and respiration was easy; six hours afterwards, reaction commenced, and she recovered.*

The fluid was thin, colourless, and slightly opaque; it was filtered through coarse paper.

Reaction, faintly alkaline; *odour*, peculiar, not at all fæculent; *specific gravity*, 1005.8 at 65° Fah. By heat the fluid became hazy. It was not treated with nitric acid. The ash effervesced with nitric acid.

Composition.—Water		991·053
Solids		8·947
		1000·000
Organic matter, of which an undetermined quantity was albumen	3·12	
Soluble Salts, viz.: Chlorides, phosphates, sulphates, carbonates	5 827	
	8·947	

Observation 7. *The last stool passed by a boy, aged* 10, *seven hours before death. There had been from eight to twelve previous stools during the illness. The algide symptoms were intense, but there were no cramps at any time.*[1]—The stool measured ʒxij—it was like gruel; there was a very incomplete separation of the flaky substance from the fluid, until gentle heat was applied, when the flaky substance fell, and left a perfectly clear and limpid supernatant fluid. It was deemed advisable to estimate the solids without separating the suspended solid matter.

Reaction, alkaline; *specific gravity*, 1010.27, at 52° Fah. The fluid would not pass through the coarsest filtering paper, and very slowly through muslin.

Nitric acid and heat produced a yellowish or fawn colour, there was no red tint; the peculiar odour, rather sharper than usual, was given

[1] Cramps are often absent in children; but in boys of this age they are generally present.

out. When the flaky substance was separated, the thin fluid gave a flocculent precipitate with nitric acid. The residue had a brownish colour. The phosphate of lime was in unusual quantity, and may have been derived from the unseparated flaky substance which caused the quantity of organic matter to appear large.

Composition.—Water		982·68
Solids		17·32
		1000·00
Organic matter, a portion of which was albumen	8·962	
Soluble Salts; Chlorides, phosphates, sulphates	7·258	
Phosphate of lime	1·100	
	17·320	

Observation 8. A stool passed by a boy, aged ten, who had presented all the algide symptoms in moderate intensity. Reaction was just commencing, and in a few hours afterwards, consecutive fever was fully established.[1]

The stool did not separate readily into two portions; when it did so, the supernatant fluid was subalbid, and turbid. The liquid was strained.

Reaction, alkaline; *odour*, peculiar, not at all fæculent; *specific gravity*, 1014, at 56° Fah.

The fluid, when heated, gave out a peculiar odour. *Nitric acid*, in small quantity, produced a yellowish tint, and a more peculiar and characteristic odour was evolved, but not so well marked as in some of the stools. An excess of nitric acid was added, and the liquid was kept boiling for six hours, when a distinct, but very small, precipitate fell, which was in too small a quantity to weigh.

Composition.—Water		972·82
Solids		27·18
		1000·00
Organic matter, of which only a small portion was albumen, and insol. salts	20·84	
Soluble Salts, viz.: Chlorides of sodium and potassium	2·938	
——— Phosphate of soda	1·8	
——— Sulphate of soda	·3951	
Other soluble salts, including carbonates	1·2069	
	6·34	
	27·18	

Observation 9. A well marked case in a woman, aged 27; the symptoms were, however, mild, though very characteristic; she ultimately recovered. First stool during the period of reaction which had a fæculent smell; at the time it was passed, the woman still presented many of the algide symptoms, though the pulse was stronger, and the surface and breath were regaining warmth.

The stool was of a yellowish-white, or subalbid colour, and separated into two portions on standing; the upper portion was whitish-yellow,

[1] This patient did not pass urine for fifty-three hours; he then passed about ten ounces of clear yellow urine; after standing for twenty-four hours, there was no sediment. The specific gravity was 1.016, at a temperature of 56°. By heat and nitric acid the fluid acquired a light red tinge, and about one-third of its bulk of albumen was thrown down. Evaporated to one-sixth, and treated with nitric acid, it exhibited, after twenty four hours, no nitrate of urea. It was not tested with Pettenköfer's test for choleic acid.

thick, and turbid; the sediment was greenish-yellow, granular and dense, and with a decided fæculent smell.[1]

Fluid filtered through coarse paper. *Reaction*, faintly alkaline: *specific gravity*, 1008.91, Temp. 55° Fah.

When boiled for ten minutes, the colour changed, and became of a light red, or fawn tint—the liquid continued alkaline—a peculiar odour was given out, which was not fæculent—there was no ammonia evolved. A few drops of nitric acid added to the hot liquid, gave a dark red, or brown colour; a copious precipitate fell, and the usual odour was given out. After boiling for an hour and a half, the red colour was unchanged. An excess of nitric acid, however, at once destroyed the colour, and the liquid became of a light yellow tint. It appeared as if a portion of the precipitate was re-dissolved. The ash effervesced with nitric acid; the solution of the salts was strongly alkaline.

Hydrochloric acid, boiled with the liquid, gave a slight, but very distinct purple tinge, and a precipitate fell; a great excess of acid neither destroyed the colour, nor re-dissolved the precipitate. Sulphuric acid gave a reddish tint, and a flocculent precipitate. Uric acid was not tested for; but after some days keeping, the fluid had acquired a smell very much like stale urine.

Composition.—Water		983·38
Solids		16·62
		1000·00
Coagulable organic matter not redissolved by excess of nitric acid	1·48	
Incoagulable organic matters	6·055	
Soluble and insoluble salts, the former consisting of chlorides, phosphates, sulphates, and carbonates	9·085	
	16·62	

Observation 10. *A boy, aged* 15, *attacked with Cholera. Subsequent reaction and febrile symptoms; then recurrence of rice water purging. The stool was taken at this time. Ultimate recovery.*

The stool separated into two parts by rest. The fluid part was watery, but turbid, and of a very light brown colour; it had no fæculent smell. The sediment was greyish-white, and was divided into two strata; the upper whiter, more flocculent, and less granular, than the lower. The fluid portion was filtered through coarse paper.

Reaction, markedly alkaline; *specific gravity*, 1017.83, at 45° Fah.

Heated with *nitric acid*, it effervesced slightly; a red tinge appeared, which became very much deeper after a few minutes boiling. An ex-

[1] This woman passed urine, for the first time, thirteen hours after the fair commencement of reaction. It was about five ounces in quantity, faintly acid, and of a yellow colour. Specific gravity, 1.018. It was highly albuminous, and threw down, with heat and nitric acid, a copious precipitate, which occupied nearly one-half of the bulk of the fluid. At the same time a very deep red colour was struck by the acid, exceedingly like the colour given by nitric acid to the stool in typhoid fever, only not quite so dark. A portion evaporated to an eighth of its bulk, and nitric acid added, gave no crystals of nitrate of urea after thirty-six hours standing.

A white flocculent precipitate subsided from this urine after a few hours standing. As I had not time to examine this, my friend, Mr. Clover, examined it, and found the following objects:—

1. Scaly and columnar epithelium.
2. Corpuscles like mucous or exudation corpuscles.
3. Vibriones.
4. Pus corpuscles?

There were no crystalline objects.

cess of nitric acid being added, and the boiling continued, the colour was partially, but not entirely destroyed. A tolerably copious precipitate fell. Uric acid was not detected.

Composition.—Water		981·79
Solids		18·21
		1000·00
Organic matter coagulated by heat and nitric acid, albumen (?)	·855	
Incoagulable organic matter and salts	17·355	
	18·210	

Owing to an accident, the soluble salts were lost after they had been dissolved out from the incinerated mass, and were being evaporated to be weighed. They appeared to be in their usual quantity, and assuming this to be 8 parts in 1000, it leaves 9.355 for the incoagulable organic matter.

Observation 11.—*A middle-aged man, after rallying from the cold stage of well-marked Cholera, continued to suffer from diarrhœa. Seven days after reaction, he had a return of what was considered rice water purging. He ultimately recovered.*

The fluid separated into two portions; the sediment was white and flocculent.

Reaction, faintly alkaline; smell peculiar, not at all fæculent; there was not sufficient fluid to take the specific gravity. Heat and nitric acid gave no violet, or red colour, nor at first was there any precipitate; but after some time, a small flocculent precipitate appeared. The peculiar odour of cholera stools was given out.

Composition.—Water		991·53
Solids		8·47
		1000·00
Incoagulable and coagulable organic matter (the latter in small quantity) and insoluble salts	4·589	
Soluble salts	3.881	
	8·170	

Observation 12.—*Fluid taken from the small intestines after death.* After filtration, it was distinctly alkaline; it coagulated by heat alone, and also by heat and nitric acid, which produced no red colour. It contained chlorides and phosphates in abundance. After some days, crystals of triple phosphate formed in it.

Observation 13.—My friend, Mr. J. E. D. Rodgers, has been kind enough to furnish me with the following account of his examination of a specimen of *intestinal fluid taken after death.*

The fluid was alkaline before evaporation, but after this process it yielded a strongly acid solution.[1] After incineration, the ash yielded a strongly alkaline solution, which contained carbonates. "Analysis indicated an immense quantity of alkaline chlorides, alkaline and earthy phosphates, and albumen."

In addition to the analyses given above, I have examined several other cases, and have always found, that the thin fluid was alkaline,

[1] Mr. Rodgers suspected this acid to be the butyric, but was not quite certain on that point.

and contained an abundance of alkaline chlorides, phosphates, and sulphates, and a certain proportion of albumen. In one or two cases, there has been a trace of iron, possibly from the presence of blood particles, which form an occasional, but very infrequent, constituent of the Cholera stools.

These observations correspond with those of O'Shaughnessy,[1] Vogel, Wittstock,[2] Buchanan,[3] and many others, made during the epidemic of 1832. I shall now proceed to draw such inferences as may safely be done from so small a number of cases.

1. There is no doubt that it is incorrect to speak of the Cholera fluid as the serum of the blood; the fluid is derived from the serum, but is not composed of all its ingredients; it consists of its water, and of its salts, with a very small proportion of its organic elements. If other organic elements of the serum are poured out, they do not remain fluid. The ash effervesces like the ash of the serum, with nitric acid.

2. The Cholera fluid, in its purest form, consists of little else than water, salts, and coagulable organic matter, which is probably albumen. The incoagulable organic matter, or extractive, which is probably an excretion from the intestinal mucous membrane, is reduced to its lowest proportion, (in one case, only .55 in 1000 parts), and possibly, in some cases, may be altogether absent.

3. This soluble incoagulable organic matter, or extractive, which exists in great quantity in healthy fæces, soon disappears from the cholera fluid. It appears to be restored when reaction commences. It raises the specific gravity of the fluid and the proportion of the solids in 1000 parts.

The following observation proves its existence in the mildest form of Cholera, or what may be called, as the algide symptoms were not present, choleroid diarrhœa:[4]—

Observation 14.—*Stool from a middle-aged woman, who had had serous diarrhœa for two or three days. Vomiting then came on; twelve hours after its commencement, she had cramps in the extremities.* The stool was passed a few hours after the commencement of cramps; at this time there was languor, and the pulse was weak; but there were no other signs of collapse; the skin was warm, and the eyes were not sunken; she speedily recovered. Cholera was ravaging the neighbourhood; and a daughter of this woman was at the time labouring under its developed form.

The stool separated, as usual, into a fluid and sediment.

The fluid was slightly brownish in tint, and semitransparent; the sediment was brownish and flocculent.

Reaction, distinctly but not strongly alkaline. *Odour* peculiar, not at all fæculent. There was not enough to take the specific gravity.

No effect was produced by heat. A small quantity of nitric acid did

[1] Report on the Chemical Pathology of the Malignant Cholera. Highley, London. 1832.

[2] Simon's Chemistry by Dr. Day, vol. ii, p. 382, and Hoefle, Chemie und Mikroscop am Krankenbette. Erlangen, 1848, pp. 87-8.

[3] Observations on the Malignant Cholera, 1832, p. 11.

[4] In another less advanced case of premonitory diarrhœa, the extractive was 3·846, the albumen ·466, the phosphate of lime ·548, and the soluble salts as much as 9·04, in the 1000 parts. The sediment was white and flocculent; and was found, under the microscope, to consist entirely of undigested food, chiefly vegetables.

not produce any red or violet tinge; an excess gave a slight yellow tinge, and a precipitate, which had previously formed, separated itself completely. An odour similar to that from other cholera stools was at the same time evolved. The solution of the salts was strongly alkaline.

Composition.—Water		986·9
Solids		13·1
		1000·0
Coagulable organic matter, albumen . . .	0·29	
Incoagulable organic matter and insoluble salts .	6·82	
Soluble salts, viz.: Chlorides, Phosphates, Sulphates .	5·99	
	13·10	

The following tabular view, from which the seventh Observation is excluded, will show more conspicuously the relation of the extractive matter, as well as of the albumen and salts, to the cholera fluid:—

Period of disease in which the stool was passed.	Specific gravity.	Albumen in 1000 parts.	Extractive in 1000 parts.	Sol. salts in 1000 parts.	Total of solids in 1000 parts
Diarrhœal period . .	1012·9	0·466	3·846	9·04	13·9
Diarrhœal period . .	—	0·29	6·82	5·99	13·1
Early algide stage . .	1009	2·4	1·27	10·98	14·65
Developed & intense algide stage	1009·5	1·18	0·55	9·14	10 87
Developed & intense algide stage	—	2·186		7·52	9·706
Developed and moderate ditto	1008·3	0·27	2·23	8·33	10·83
Developed and moderate ditto	1005·8	3·2		5·827	8·947
Commencement of reaction .	1014·0	20·84		6.34	27·18
Commencement of reaction .	1008 91	1·48	6·055	9·085	16·62
Relapse	1017·83	0·855	17·355		18·21
Relapse	—	not weighable	4·589	3·881	8·47

4. Although the extractive is thus affected by the intensity of the disease, it does not appear that the salts and albumen are equally so. The analyses are too few to allow me to speak with certainty; but it seems probable that, both in the premonitory period, and in the stage immediately following the algide period, when the pulse is again felt and warmth is returning to the surface, the proportion of effused salts and perhaps of the albumen, may be as great in any particular stool as in the depth of the algide stage. The number of stools, of course, differs in the respective periods.

5. The albumen and the salts do not seem to bear a very constant proportion to each other; but the salts hardly ever seem to be thrown out, without carrying with them a portion of albumen, however small.[1]

[1] In the liquid stools of typhoid fever (by which term I mean the disease described by Louis), the quantity of albumen in solution, is, as in Cholera, very small; and is never found unless soluble salts, similar to those of the blood-serum, are also present. In one case it was 0·63, while the soluble salts were 7·24, in 1000 parts. In a second case it was 0·457, and the salts were 5·164, in 1000 parts. It would even appear as if some portion of the albumen of the serum were so much more intimately combined with the salts than the remaining larger mass, that it is alone effused when the salts are poured out.

The greatest amount of the albumen is very trifling; and I have never seen any other case in which, from the bulk of the precipitate, I was led to infer that it very greatly exceeded in amount the quantity stated in the above analyses.

6. Boehm remarks,[1] that the discharges probably do not all come from the mucous membrane; but that some of the fluid may be derived from the immense quantity of water drank by the patient. This may be the case sometimes, but there is no indication of such a dilution in the above analyses; the proportion between the salts and the water is tolerably well preserved, and renders it likely that these constituents were both derived from the same source.

7. As in the deep algide stage the excretion of the extractive is arrested, so also, in great measure, is that of the earthy phosphates, which are thrown out so largely by the healthy intestinal surface. In some cases there has hardly been a trace of the phosphate of lime; in others this has existed in diminished quantity. In no case has it nearly equalled the healthy standard, or approached to the excessive increase which occurs in the stools of typhoid fever. In the cholera stools, the crystals of triple phosphate, although sometimes seen, are infrequent.

8. Nitric acid does not, as Simon supposed, produce any change of colour in the true cholera fluid. When the violet tint does occur, the stool has generally a fæculent smell. The colour is clearly not owing to uric acid, for it is destroyed by an excess of nitric acid, though not, in my experiments, by boiling. Moreover, as Dr. Garrod pointed out, it must be owing to an organic substance soluble in alcohol. It is then either to be attributed to the presence of bile, or to some substance excreted by the intestinal mucous membrane. There is no evidence of bile beyond this colour, and as there is a remarkable retention of this product in cholera, as in dysentery, I am disposed to think the last supposition the most probable one. The same organic matter, if I may speak from the similarity of the remarkable tint produced by the acid, was passing off by the urine in one of the cases of reaction. As uric acid appears to be usually excreted in very small quantity in the first urine passed after cholera,[2] the colour was probably not attributable to it, and it was indeed dissimilar in shade.[3]

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[1] Die Kranke Darmschleimhaut in der Asiatischen Cholera, etc., von Dr Ludwig Boehm. Berlin, 1838, p. 15.

[2] Dr. Letheby has lately made two analyses of urine passed during reaction, in which the proportion both of urea and uric acid is low, while that of extractive (kreatine, kreatinine, and other organic matters) is very high.—(*Medical Gazette* for December.)

[3] The same colour, only of a very much deeper shade, is given by the fluid part of the stools in the "fièvre typhoide," and I have also seen it several times in the urine of persons labouring under obscure affections of the digestive organs, not connected, as far as I could make out, with the liver. It is important to remember, as bearing on the question of the nature of fever consecutive to Cholera, that urea and uric acid and kreatine are not the only excretions which may be retained in the blood; it is very possible that the peculiar organic compounds, usually excreted by the intestinal mucous membrane, may be also retained, in consequence of the deep injury this membrane has undergone. In other diseases, I have been led to infer, although it is exceedingly difficult to prove the supposition, that the interruption to the secreting function of the intestinal mucous membrane produces serious disorders in other organs, which may be connected with it in function, or may be called upon to supply the deficiency. I have formerly argued that certain diseases of the liver, of the pan-

9. Although the inference of Wittstock, drawn from the colour given by nitric acid, that the cholera fluid contained uric acid, is erroneous, because the colour cannot be always obtained, and when obtained, cannot be owing to uric acid, it appears, from Dr. Garrod's first analysis, that a trace of this acid may exist, as it does in healthy serum; Dr. Garrod, in his second analysis, could not detect any, and I have carefully looked for it without success.

10. In many cases, Pettenköfer's test for the organic principle of bile has been used, but no trace of this substance has been found.

II. MICROSCOPIC EXAMINATION OF THE SEDIMENT IN THE STOOLS, THE SO-CALLED "CHOLERA MASSES."

Many stools receive the name of "rice-water", which have no claim to this appellation. The sediment in the true rice-water stool is perfectly white, in flocks or little shreds, and is exceedingly light. Sometimes, the entire stool seems not to have a greater specific gravity than the fluid separated from the sediment. This lightness may be illustrated by the following fact:—The whole flocculent substance from a stool which measured more than a pint in quantity, and which was well washed and dried, in order that it might be submitted to ultimate analysis, weighed only four grains.

The most accurate microscopic examination of the cholera masses are those made by Boehm in 1832, and described and figured in the work to which I have already referred. His descriptions, however, apply almost entirely to the fluid contained in the intestines after death, and he does not seem to have bestowed equal attention on the sediments of the stools. As the proper comprehension of Boehm's admirable researches is essential to the discussion on this subject, I shall, as briefly as clearness will permit, detail his opinions.

In the first chapter, Boehm describes minutely the changes in the epithelium of the intestinal mucous membrane in Cholera. In the second chapter, he describes the microscopic character of the cholera masses. After saying that, in all languages of Asia and Europe, the epithets flocculent, creamy, like groats-broth, like rice-water, etc., have been applied to the intestinal fluid, he goes on to say that the various products, however different to the naked eye, described under these terms, may be all referred to changes in the epithelial coat. The thin fluid, however, he decides to be undoubtedly a secretion from the blood, which is poured in large quantity through the diseased intestinal membrane. The varieties of the intestinal contents depend on the varying proportions of this secretion and the cast-off epithelial particles, and on changes in the latter. He then enumerates the several varieties. The fluid was like *milk* when the quantity of secretion was great, and the epithelial particles were all separated from each other; it was *purulent* or *creamy* when the epithelium, separated into its finest elements, was scantily diluted with the secretion; it was *flocculent* when, with a pro-

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creas, and less frequently of the kidneys, follow large and irreparable destruction of the mucous membrane of the colon in tropical dysentery. Some affection of these organs is not uncommon after mild attacks of Cholera; it may be, possibly, from a similar cause.

fuse secretion, the epithelial particles were not separated, but cohered together, and under the microscope presented flat lamellæ if they came from the smooth mucous coat, or crooked cylinder-like masses, or tubes, domes, or glove-like cases, according as, more or less perfectly cohering, they were shed from the apices, bases, or entire surfaces of the villi, or from the interior of the follicles; it was like *rice-water* when the flocculi, in smaller quantity, swam in a slightly turbid secretion; it was like *oatmeal-broth*, when the larger epithelium masses were of various colours, white or greyish green, mixed intimately with each other, assuming, from the scanty secretion mixed with them, a pulpy consistence. When the cholera masses were adherent, this was owing to the partial separation of large patches of epithelium, the further mixing of which with the general contents of the intestine was prevented by death. Boehm then goes on to describe the *mucous* intestinal contents (which, he says, are rare as long as Cholera is acute), the *bilious* contents seen at the end of the slighter cases, and the *bloody* contents seen in some of the severest cases. With these last observations I shall not concern myself at present. Boehm makes one very important observation, viz., that while in the severest cases of Cholera epithelial particles, in immense quantities and with the sharpest outlines, are found on the iliac side of the ilio-colic valve, on the other side of the valve their number at once diminishes in an extraordinary manner, and sometimes they are not seen at all. He accounts for this by supposing that the epithelial coat of the small intestine is soluble in the fluid poured into the large intestine. He says also, that he yet seldomer found pyramidal epithelium particles in the discharges, although there was a quantity of flocculi, which, at the end of the chapter, he describes as composed of semitransparent long strings of an elastic consistence, so that, after being pressed between plates of glass, they recovered their form. These flocks often enclosed little crystals of a rhomboidal form, which, as they also occurred in the cholera fluid, seemed to imply that these elastic shreds might arise from coagulation of some material, which perhaps, he says, owed its origin to solution of epithelial fragments.[1]

In some respects, it would be difficult to describe more accurately the contents of the intestines after death; in no other disease are such beautiful specimens of epithelium seen, and their several conditions cannot be better described than they are in Boehm's work. But the account of the flocks of the stools is meagre and unsatisfactory; and Boehm appears to me to have even overlooked some elements in the intestinal contents.[2]

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[1] Op. cit. pp. 10 to 35.

[2] I have not been fortunate enough to meet with any detailed observations made during the present epidemic in St. Petersburg or in Berlin, on the intestinal discharges. From some very interesting debates, however, in the *Gesellschaft für wissenschaftliche Medicin* of Berlin, reported in *Die Medicinische Reform* for September, October, and November, it is apparent that Boehm's opinion of the extreme importance of the casting off of the epithelium is considered erroneous. This is not only maintained by Virchow and the partisans of the opinion which regards Cholera as a general blood disease, but also by Leubuscher and others, who consider all symptoms as sequences of the disease of the intestinal mucous membrane, and who, it might have been supposed, would have attached much importance to changes in the epithelial coat. Thus Leubuscher says that he cannot consider, with Boehm, the essence of Cholera to be repre-

Before proceeding to this point, I shall subjoin a few microscopic observations on the stools. I was anxious to have these made by independent observers, so that no hypothesis of my own might be supposed to have biassed me. The names of the gentlemen who so kindly complied with my request, is an ample guarantee for the extreme accuracy of the observations. The numbers refer to the corresponding analyses of the fluid of the same stool.

Observation 1. *Early algide stage.*—Examined by Dr. Jenner, with a power of 400 diameters.

"1. Some closely aggregated amorphous, very fine granular matter, rendered somewhat more transparent by acetic acid.

"2. Numerous minute granules, the largest transparent and yellow, surrounded by a dark border, the smallest dark and opaque; acetic acid rendered some of the granules more transparent; liquor potassæ dissolved a few, and rendered others more transparent; boiled in ether for seven minutes, they appeared undiminished in number and unaltered in appearance.

"3. Organic corpuscles, similar to those described subsequently (Observation 6, No. 3), but much fewer in number, and generally smaller; many of them imperfectly formed, the capsule enveloping them being indistinct, so that they looked like a simple aggregation of black and yellow granules.

"4. A few semitransparent, peculiarly smooth granules, unaffected by cold liquor potassæ or acetic acid.

"5. No epithelium particles, no pus globules, nor blood corpuscles, either red or white."

Observation 2.—*Developed and intense algide stage.* Examined by Professor Ellis.

"The white, flaky substance, suspended in the rice-water stool, consists of a clear transparent basis, which contains a granular material and cells.

"*Granules.*—The granular material is seen on the surface of the mass, and is collected here and there into patches of uncertain size and irregular form; the molecules composing it are very minute.

"*Cells.*—The cells are strewed thickly through the mass; and, speaking generally, they may be said to be rather larger than the white corpuscles of the blood. In many parts they seem to be arranged in lines, but this appearance may be due to only a certain number coming into focus at the same time.

"*Form of cells.*—Some of the cells are roundish in form, though none are circular; and many (perhaps an equal number) are oval or elongated. The lengthened cells are about the size of the others in their short diameter.

"*Contents of cells.*—Both sets of cells have finely granular contents, and a dark defined circle round them.

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sented by this throwing off of epithelium; this is only a secondary process; "die Abstossung ist immer nur ein secondärer Prozess."—(Op. cit. Nov. 3, p. 124.)

It may not be uninteresting to mention that, in these debates, are many important details of the "diphtheritic inflammations" of various organs, which occur in the consecutive fever.

"*Size.*—The statement respecting size must not be taken too literally, for many cells are larger than the size stated, and many are smaller.

"*Action of acetic acid*, equal parts of acid and water. Acetic acid causes the mass to shrink and become more transparent. The cells become very indistinct, being in some cases scarcely recognizable, even where the material is thin. But where the mass is thick, the granular material comes more distinctly into view. Of course the fibriform appearance is lost; the acid seems to gelatinize the mass.

"*Nature.* The material resembles exudation mass more than any other substance."

Observation 3.—*Developed and intense algide stage.* Examined by Professor Sharpey.

"1. No characteristic epithelium particles to be seen.

"2. Slimy flakes, containing, scattered about, irregular-shaped particles, and small molecules.

"3. A few white finely-granular corpuscles; some round, others of a more or less irregular shape; in size a little smaller than the pale corpuscles of the blood."

There may have been other matters; but Dr. Sharpey had time to make only a cursory examination.

Observation 4.—*Developed and intense algide stage.* Examined by Mr. Hillman; Mr. Quekett, of the College of Surgeons, was kind enough to confirm the observation, and to make sketches of the objects, which I possess.

"1. Squamous epithelial particles; none of the columnar form.

"2. Nucleated and granular bodies, resembling exudation corpuscles.

"3. A small number of blood corpuscles.

"4. Irregularly-shaped flattened cells, with single large central nuclei; rather larger in size than the exudation corpuscle.

"5. Membranous shreds, resembling basement membrane."

Observation 5.—*Developed and moderate algide stage.* Examined by Mr. Clover. Unfortunately it could not be examined till four or five days after it was passed. There was a quantity of granular matter, and scaly and columnar epithelium.

Observation 6.—*Developed and moderate algide stage* Examined by Dr. Jenner.

"1. Colourless, semitransparent, amorphous, membranous flakes; dissolved or rendered transparent by acetic acid or liquor potassæ. Boiling ether has no effect upon them (albumen?)."

"2. Semitransparent fibres, lying in close apposition; perhaps united by No. 1, or may be only the same matter arranged in striæ. They were seen most distinctly at the parts of the field in which the tissue had accumulated in the thickest masses. Liquor potassæ dissolved them, or rendered them very transparent (fibrine?).

"3. Organic corpuscles; round, oval, irregularly oval, or pointed at one end, and rounded at the other; more or less spherical, finely-granular on the surface, and containing, in their interior, minute granules, varying in number from six or eight, to sufficient to fill the entire corpuscle.

Some of these contained granules were mere black points; others were transparent and yellow, with dark margins. In size, the round corpuscles varied from 1-4000 to 4-5000 of an inch in diameter. The oval corpuscles were about 1-4000 in breadth and 4-5000 in length. They had both a faintly-yellow tint. Boiled in ether for seven minutes, they were unchanged.

"4. Granules similar to those described in observation 1, No. 2.

"5. One large granular body, semiopaque and yellow; 1-1000 of an inch in diameter; unaffected by acetic acid.

"6. Vibriones in great numbers. Two or three oval transparent bodies placed end to end. When the stool was kept, these fungi increased in numbers."

Observation 7.—*Intense algide stage. No cramps throughout illness.* Examined by myself. Power of microscope, 400 diameters.

1. Amorphous finely-granular matter.
2. A few molecules.
3. No epithelium or blood corpuscles.

In this case the flaky matter did not separate from the thin fluid till gentle heat was applied; it then formed a confused sediment, which had not the usual flocculent appearance. Mr. Bowman saw this stool, and confirmed the above observation.

Observation 8.—*Commencement of reaction.* Examined by myself. Power of microscope, 400 diameters.

1. A large quantity of transparent gelatinous matter, completely dissolved by acetic acid.
2. In the meshes of this matter, many dark or yellowish granules, unaffected, or nearly so, by acetic acid.
3. In some few cases, these granules were aggregated together, and formed little masses; whether then surrounded by a cell-wall could not be determined.
4. One or two large cells, containing two or three central granules.
5. No epithelium. After a long examination, one or two particles were seen, which looked like debris.

Observation 9.—*Commencement of reaction.* Examined by myself, immediately after it was passed.

There were a few epithelial scales, and granular and molecular matter, but hardly any of the peculiar corpuscles formerly described.

Observation 10.—*Relapse.* Examined by Mr. Quekett and Mr. Hillman.

"1. Small masses of biliary resin.

"2. Granular matter, similar to that seen in mucous corpuscles, and such as is obtainable by squeezing the follicles of the intestinal canal.

"3. Portion of muscular tissue (adventitious).

"4. No epithelium—no exudation corpuscles—no blood."

Observation 11.—*Relapse.* Examined by myself.

To the naked eye, the sediment appeared partly finely-granular and partly flocculent,—not at all unlike some true Cholera masses. It consisted entirely of shreds of striped muscular fibre (adventitious), of particles, apparently of undigested food, and of molecular matter. No dark yellow granules were seen; neither was there any appearance of epithelium, nor of blood.

Observation 12.—*Fluid from intestine.* Examined by myself.

1. Epithelium particles very numerous.

2. Organic corpuscles, about the same size as the pale corpuscles of the blood, finely granular on the surface, and containing from six to twelve dark yellow or black granules. Acetic acid caused no appearance of nuclei.

3. A few red blood corpuscles, very much altered and irregular in outline.

4. A few cells, like immature epithelial particles, small and irregular.

5. Granules of the same size as those described in No. 2, but free.

After several days' keeping, the fluid was again examined, when the same elements were seen, with the addition of a few crystals of triple phosphate.

Observation 13.—*Fluid from Intestine.* Examined by Mr. Rodgers.

An immense quantity of epithelium was seen. A dried specimen exhibited a large quantity of crystals of alkaline chlorides, a few crystals of phosphate of ammonia and magnesia, and a little phosphate of lime.

Observation 14.—*Choleroid diarrhœa.* Examined by Mr. Clover and myself.

Epithelial scales, granular matter, and shreds of vegetable fibre and cells derived from food, were observed.

In addition to the above examinations, I have made some others, which agree completely with them, but which, to avoid repetition, I shall not here insert.

These observations, made by independent observers, have a remarkable uniformity among themselves, but differ completely from Boehm's descriptions. In the true Cholera masses, there are the fibres to which he alludes; but there exist also corpuscles, peculiar granules, and an amorphous flaky matter, which he has not noticed in the stools, nor in the contents taken from the small intestine after death. In both these situations, these elements exist in abundance, though mixed, in the intestine, with an immense quantity of epithelium, which may possibly, in some cases, obscure them, or cause them to be overlooked.

I do not think any one who had ever seen these corpuscles, could for a moment suppose them to be any modification of broken down epithelium, or to be immature and imperfectly-formed epithelial nuclei. They are different in size, and in all their physical appearances; and, moreover, it must be remembered, that cylinder epithelium is confessedly scarcely ever seen in the cholera stools; and that if it were so seen, and could by any change or breaking down form either the corpuscles or the granules, we ought to be able to find all grades and phases of the change. Neither can it be considered probable that the epithelium of the small intestines is soluble in the fluid of the large, and that then, by deposition, it forms these corpuscles, or the fibres which Boehm describes. In the fluid of the small intestines, the epithelial particles often preserve their sharp and definite outline for days, although they occasionally do seem to break up. It is by no means probable that the fluid effused into the cœcum, which is doubtless of the same nature as that from the whole canal, can possess any such solvent power.

If not epithelium, can these be mucous corpuscles and granules

thrown off, as it were, by an intense *catarrh* of the mucous coat?[1] In reply to this, it may be argued: 1, that these bodies are much smaller than the large corpuscles with the central granules, seen in mucus; the granules are of a different kind, are differently arranged in the interior of the cell, and are differently acted on by acetic acid. 2. It is not likely that mucus would be secreted in such enormous quantity, while the usual excreting functions of the mucous membrane are evidently totally abolished. 3. If these corpuscles are mucous, why should they not appear through the whole course of the disease, instead of being confined to the deep algide period? They are not seen in the premonitory diarrhœa, nor after the algide stage; and disappear when the pulse and the warmth of the surface are returning. Now, it seems unlikely, that if they are formed by an intense irritation of the mucous coat, they should so rapidly disappear. I do not wish, however, positively to contend that these corpuscles are not mucous, since I have not compared them, as I hope soon to do, with the intestinal mucous corpuscles in other diseases.

But whatever be the nature of these corpuscles, it seems to me impossible to consider the fibres and gelatinous-looking flakes, mucus. If they are so considered, everything which appears on the surface of a mucous membrane may be called mucus, without any regard to the nature of the action which has been exerted upon the transuding blood fluid, by the textures through which it passes. These fibres and flakes, in all respects, chemical and microscopical, resemble those seen in the so-called inflammatory exudation matter, and it is in the highest degree probable that they owe their origin to effused blood-plasma, which assumes with great rapidity a low, ill-defined, and non-progressive organization. This opinion is rendered still more probable by the fact, that other elements of the blood are effused in the cholera fluid, and that the plasma itself is certainly poured into the solitary and Peyerian glands, (distending their capsules to a great extent,) and perhaps into the entire mucous membrane.

Boehm alludes very briefly to the possibility of this occurrence. He writes:—

"In previous observations, carried on to determine the nature of the flocculent substance, that opinion was most likely, which considered that together with the serous element of the blood, the so-named albuminous, or plastic material, transuded in a dissolved form into the intestinal canal, and then separated in the form of flocculi. In this case, however, the flocculi would naturally exhibit no organized structure and arrangement."[2]

Boehm certainly appears to have been a little biassed by his observations on the great desquamation of epithelium, when he did not proceed to *prove* that this unorganized plastic matter was not present, an observation it was certainly incumbent upon him to make.

With regard even to the separation of the epithelium, although, from the facility with which this structure is shed, even during certain ordinary healthy processes, it does appear probable *a priori*, that it would be

[1] This would probably be the opinion of Andral, who has already (*Gazette Médicale*, No. 33, 1847) called this substance "modified mucus."

[2] Op. Cit., p 19. From the size of Boehm's plates, it appears probable that his microscope was not of sufficient power to enable him to see the corpuscles.

largely thrown off in Cholera, there is absolutely no proof that it is so thrown off, until after the death of the patient. The stools contain none, or a quantity not more considerable than is present in common diarrhœa, if even so much.[1] If the epithelium is separated, during life, what could prevent its passing off? It cannot surely be separated and yet retained. Is it then so broken up that it cannot be recognized? This is impossible. Boehm himself accounts for this difficulty, by assuming that the epithelium is dissolved in the fluid of the large intestine; but this is, in the first place, unlikely; and secondly, is not indicated by analysis. Besides, if during the whole course of Cholera, epithelium is thrown off, how is it that we find it after death in such great abundance?[2] Is it not most likely that the epithelium does not really separate in any quantity during life; but that after death, being continually immersed in the fluid which fills the intestines, and being possibly, in some measure, rudely shaken by the previous rapid transit of the Cholera fluid, it may separate itself more or less completely from the basement membrane, and divide itself more or less minutely into its smallest elements, according to the length of time after death, the violence used in opening the intestine, and other obvious circumstances?[3] It is quite certain that the several varieties of the stools, such as milky, chalky, &c., are given, not by epithelium, but by very small granules. In the milky stools, there is often a complete "molecular base."

It appears to me the most simple, and the most likely view to consider all the flocculent matter of the true Cholera stool, cells, dark yellow granules, fibres, flakes, and amorphous matter, to be but modifications of the same substance, viz., fibrine. The granules appear to form, by aggregation, little masses, round which a cell wall forms in the way which, as pointed out by Henle, occurs in certain inflammatory exudations, or perhaps cells may form from the liquid plasma, as in the low organization taking place in the follicular deposit of typhoid fever.

Whether this be the case or not, it may be considered probable that the microscopic forms now referred to, co exist in their greatest perfection with the purest type of the Cholera fluid.[4] They are effused while the disease is at its acme. Immediately after the algide stage, in the first stool of reaction, they become indistinct, and finally disappear; the effusion of fibrine into the intestinal canal appears to have stopped; the sediment of the stools consists now only of amorphous matter, a few perhaps of the peculiar granules, and a little epitheliun. It may be mistaken, however, if judged only by the eye, for a true Cholera mass, although it does not contain the characteristic elements.

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[1] It is probable, however, that in the period of reaction especially, there is a great tendency to desquamation, and that one form of consecutive fever is complicated with this.

[2] In order to account for the great quantity of flocculent matter found after death, and the small quantity passed in the stool, I formerly, believing the matter to be of the same kind in both, suggested that the thinner portions only might pass off; but this explanation is unnecessary, if the opinions advanced above are correct.

[3] The epithelium of the gall-bladder, in other diseases besides Cholera, separates in this way after death, particularly where the bile is watery.

[4] I must state, however, that I have met with two or three stools, passed during the cold stage, in which the flocculent matter appeared granular and amorphous But these were all mild cases, and there were foreign matters in the stool which obscured the view, and I may mention that in these cases it was singular that there was very little lividity of the skin.

Then gradually the quantity of Cholera fluid lessens, and finally, bile pigment appears, and the stools lose altogether the Choleraic character.

Want of space compels me to dismiss these most important topics, with this indication merely of the chief points of interest. I hope on a future occasion, to be able to adduce additional facts in corroboration, or modification of my views, and to enter more fully into the question of the relation of the individual elements of the Cholera dejections, to the general phenomena of the disease.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF TROPICAL FEVERS.

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(*Continued from p. 50.*)

III. REMITTENT FEVER.

The tendency of intermittents, when unchecked, to pass into remittents, and of the latter to change again to the intermittent form, during the transition from the hot to the cold season, shows the intimate relation of these varieties of fever. In 1821, the rainy season at Kaira was unusually light, the weather consequently hot, producing among the men of the Horse Artillery a great amount of hepatic disease, but comparatively few cases of remittent fever. The latter, however, was prevalent in H.M. 17th Dragoons, who were located leeward of fertile, marshy ground that lies south of the cantonment towards Cambay; while the site of the latter was lower and more favourable to malarious emanations, than was the locality of the Horse Artillery Barrack. Here a slight elevation and comparative dryness of soil produced only intermittents and attacks of hepatic disease; there a lower level and damper situation, abounding with pools of water, which dried up as the weather got hot, gave origin to remittents.

The Kaira district of Gujerat, in which the dragoon cantonments were situated, is a flat, sandy country, where the land is well cultivated and fertile, producing abundance of rice, wheat, and other grains. The soil is a mixture of sand and vegetable mould, the substratum of which is a granular carbonate of lime, here and there elevated into hillocks, or sloping in gentle declivities towards the beds of the rivulets, which have a slow, almost stagnant, course towards the sea. The nature of the soil, and flatness of the land, admit of the country being easily flooded during the rainy season, which begins in the middle of June and continues till the end of September. While the rain is actually falling, intermittents and dysenteries are the prevailing complaints; but towards the termination of the season, when vegetable decomposition begins to take place, and the vapour which arises from damp situations during the day is seen at evening to hang over them in the form of a white haze, remittent fevers of a violent nature become general. From the middle of September to the middle of November, when the climate is humid, hot, and oppressive, these fevers rage with great severity, and in various forms, according to the peculiar atmospheric condition of particular seasons, and prove very fatal to recently-arrived Europeans.

In the beginning of June, 1822, the 4th Dragoons, from Europe, relieved the 17th Dragoons at Kaira. The former regiment, about 600 strong, was, in a great measure, composed of healthy young men from the labouring class, very few of whom were under eighteen years of age, or beyond the period of middle life. Soon after their arrival at the station, the rainy season commenced, with squalls of wind from the S.W. The rain was continuous and fell heavily during August, when the maximum of the thermometer fell from 94° to 90° of Fahrenheit. About the 20th of September the monsoon ceased, the days were hot and sultry, and generally a heavy dew fell at night. The first part of October was also sultry and oppressive, though there were occasional showers. Towards the end of this month the wind changed from S.W. to S. E., and there were thick morning fogs on the ground, which never dispersed before the sun had attained a considerable height. While the rains were falling, the prevailing diseases, in the 4th Dragoons, were bowel complaints and intermittent fever; and among the men of the Horse Artillery, rheumatism and fevers of a mild type. Among both bodies of men, however, severe remittents were generally prevalent in the end of September, and proved very fatal to those of the dragoons: this regiment having lost, from the beginning of June to the end of December, three officers, fifty-one men, seven women, and twenty-seven infants and children, chiefly from fever and bowel complaints. In the same period the horse-artillery lost six men, of whom five died from remittent fever, and the other from chronic hepatitis. In the end of November the cold weather set in, and the intermittents admitted into hospital from this time were attended by better marked symptoms of hepatic affection, and a less violent hot stage, than had characterized fevers of the same type in October. On the 2nd of December the horse artillery marched from Kaira *en route* to Poona, passing through a country where *mourah* and other strong spirituous liquors were easily and cheaply procured. Many of the men were consequently often intoxicated, and were exposed to the influence of causes that usually produce fevers of periodicity, viz., jungle or thick brushwood, and long rank grass, existing in the district between the rivers *Nerbudda* and *Tapti*. Extreme variations of temperature between the heat and cold of the days and nights, which happened at this time, gave great energy and effect to the malarious causes originating from these sources, and which, in this instance, appear to have acted rather as predisposing than as exciting ones, in giving rise to fevers of great severity. The variations were sometimes so great as 30° of Fahrenheit, the thermometer standing at 85° during the day, and descending so low as 54° at night. The two troops of horse-artillery from Kaira joined, on the 2nd January, 1823, the relieving bodies on their march from Seroor, and both divisions halted at the station of Baldipara, in the neighbourhood of the Portuguese settlement of Damaun. Here all the troops were encamped for several days, leeward of an extensive tank and marsh, over which a north-east wind was constantly blowing; and before many days a severe bilious remittent fever, attended by symptoms of congestion, broke out among the men from Kaira, and proved fatal to three of the nineteen attacked. The influence of the morbific predisposing causes, *intoxica-*

tion and former febrile attacks, was developed in the production of severe fever among those from Kaira; while the more robust and healthy subjects from the Dekhan, not exposed to like causes, continued free from fever during the whole period of our encampment.

The conversion of *intermittents* into remittents follows, as we have shewn, increase of temperature and augmented malarious influence; being dependent, as would appear, on increased nervous irritability, chiefly affecting the cerebro-spinal and grand sympathetic circle of nerves, as will be presently illustrated in the pathology of these fevers. The modifications of them which I have observed in different parts of India, may be described as four varieties: 1*st*, Simple or uncomplicated remittent; 2*nd*, Inflammatory or complicated; 3*rd*, Asthenic or congestive; and 4*th*, The typhoid. The first is the most common form of remittent met with in Bombay; the two next are those usually affecting young, healthy European subjects in Gujerat, or soon after their arrival within the tropics; and the last may be either the effect of *over treatment*, particularly *profuse bloodletting*, and the too *free use of purgatives;* or the primary effect of weak constitutional powers, and the concentrated application of endemic causes, and cold. The assemblage of symptoms, characterizing these diversities of tropical remittent, is useful for practical purposes, and the phenomena distinguishing each may be described as succinctly as possible.

Simple Remittent.—In this the febrile symptoms crept slowly on, the patient at first complaining of extreme lassitude without any adequate cause, slight headache and pain of the limbs, loss of appetite, and occasional uneasiness at the epigastrium. The features were pale and shrunk, the eyes dull, heavy, and listless, with occasional chills running along the spine. The tongue was either covered with a thin white film, or yellow and loaded, but generally moist. The bowels were, for the most part, constipated, and the pulse small and frequent. This period of nervous depression was succeeded by symptoms of reaction: the pulse and skin increased in volume and temperature; the headache became more severe, with occasional delirium, accompanied by nausea at the stomach and vomiting of bilious matter. The tongue was now dry and furred, the thirst great, the urine high-coloured and scanty, and the patient complained of a painful sense of weariness, causing a constant desire for change of posture. In most cases these symptoms had a well-marked diurnal exacerbation and remission, almost amounting, in the slighter forms, to intermission; and after a period, varying from three to six days, were partially relieved by a general warm perspiration appearing on the skin, indicating that, though the secretions from the liver, kidneys, and intestinal mucous surface, were impeded and deranged, there was still no actual inflammation of these organs, which seemed to be only functionally affected. The increased or diminished temperature of the skin, and the greater or smaller volume of the pulse, mark well the remittent character of the fever, and should be carefully observed both during the day and at night, particularly as midnight is found in many instances to be the time of the exacerbation.

This species of mild, uncomplicated, remittent fever, is that usually met with among the *sipahies* of our native regiments, and in European constitutions, where the sanguineous temperament is not strongly de-

veloped, and where there are no indications of high nervous mobility. It is not, therefore, associated with a phlogistic state of the blood, or marked inflammatory action in any of the organs, unless allowed to proceed uninterruptedly, or without efficient treatment, till the third, or sometimes the sixth day: at which periods the disease, from having, as appeared, the tertian type, showed a disposition to natural crisis and relief of all the symptoms. But when the perspiration, which broke out at these periods, proved imperfectly critical, there was generally, about the sixth day, a tendency in the disease to terminate in partial collapse, with congestion of some important organ,—the liver, spleen, or brain. This state was followed by a stage of reaction, to which succeeded well-marked inflammatory affection of some of these parts, converting this originally mild variety of remittent into the more severe inflammatory species; which, when proceeding from high health, phlogosis of the blood, and much derangement of the secretions, may be an original disease.

Inflammatory Remittent.—In this all the symptoms characterizing the mild form were increased in degree, and were present in the cases admitted into hospital during the extreme heat that took place in the end of September and beginning of October. The patients described the chilliness as running along the spine in distinct shocks; to which succeeded excruciating headache, flushed swollen countenance, hot dry skin, much irritability of stomach, great thirst, severe aching pains in the loins and lower extremities, and a very frequent, bounding, but compressible pulse. These symptoms, for the most part, suffered a remission at night, or towards morning; but the ascension of the sun, and the extreme heat after noon, brought with them an exacerbation. In some instances, the remission seemed more remarkable and distinct on the morning of the odd, than of the even day, arising, probably, from the original type of the fever being tertian; but in others, the symptoms were nearly continued, and not marked by any very distinct remission. The salivary secretion was very defective and viscid; the tongue either covered by a white slimy crust, or furred and parched. In the latter case, the thirst was most distressing—amounting, indeed, to agony—in the height of the exacerbation; so that patients even derived relief from exposing the tongue to the air. The biliary and cutaneous secretions were defective; and the urine sometimes so acrimonious as to create strangury. The temperature of the surface, measured by a thermometer, was 105°. Some of the patients had a fixed pain at the vertex of the head, and tenderness of the scalp. One also had tenderness along the course of the spinal canal; so that pressure on the cervical vertebræ immediately produced an inclination to vomit. Extreme giddiness was a bad symptom; and was connected, as appeared, with much venous congestion of the brain. The severity of pain in the extremities seemed proportionate to the cerebral affection. One patient had delirium; and the sleep of all was much disturbed. There was great oppression at the chest and epigastrium; and the respirations were short and quick. The pulse, at the height of exacerbation, was generally 140°; and did not fall lower than 118° during the remission. Its strength varied throughout the day, and rose in proportion to the heat of the atmosphere. In the morning, when the

air was coolest, it was small and frequent; but at three o'clock in the afternoon, during the greatest heat, it was full but compressible. The biliary function was deranged from the commencement of the disease, though there was seldom pain in the region of the liver, until the fever had been of several days' duration. There was frequently deficiency of bile in the alvine evacuations; though sometimes its presence in the stomach, and in too great quantity, created nausea and oppression. The alvine evacuations were sometimes as black as tar; but varied from this to a leaden brown and dark yellow colour. Many of the patients, previous to the development of the febrile symptoms, had been passing large quantities of mucus by stool; and, under such circumstances, the prognosis was unfavourable, as the whole intestinal mucous surface seemed to be in a state of morbid vascularity.

Congestive, or Asthenic Remittent,—is distinguished by great languor and drowsiness, mental depression, and pain in the head, attended by a sense of constriction, as if a band compressed the brain. There was much anxiety and oppression of the præcordia, general defective condition of the secretory functions, accompanied by an oppressed, feeble pulse, and cold, moist, clammy skin. These symptoms were seldom preceded by attacks of chilliness or shivering, as in the two former varieties; but were attended by continued sense of cold and tendency to collapse, as in cases of cholera, and without any well-marked general reaction; there being, in this stage, partial flushings of the face, heat of hands, or greatly increased temperature at the epigastrium and over the abdomen. The eyes were sunk, and injected with blood; and the tongue clammy and moist. The phenomena of this variety have been correctly attributed to suspended function of the cerebro-spinal and great sympathetic nerves, attended by depressed action of the vascular system, and follow the intense sedative influence of the malarious poison. In some instances, however, met with at various times, the symptoms seemed to be connected with long-standing disease of the liver, kidneys, and central organ of circulation.

Typhoid Remittent.—When this form of the remittent appeared as an original disease, the symptoms continued for two or three days, without distinct remissions or exacerbations. There were much tension and tenderness at the epigastrium; nausea, or vomiting; the skin was harshly dry and hot; the tongue parched and brown, or sometimes furred in the centre, and red at the edges; the alvine evacuations were dark and offensive; drowsiness or muttering delirium, a feeble, frequent pulse, tremor of the hands, sordes of the lips and gums, and occasional subsultus tendinum, were present. In other cases, where the symptoms were the effect of too free blood-letting, or the injudicious use of purgatives, the stage of vascular excitement, observable in the two first varieties, gave way to indications of extreme nervous depression and general atony of the vascular system. The patient's headache was succeeded by drowsiness and starting of the tendons, in some cases, and by restlessness and febrile anxiety in others. The respiration became quicker and shorter; the temperature of the skin fell below the natural standard; the countenance grew pale and haggard; the tunica albuginea of the eye became of a yellowish hue, or there was general bilious suffusion of the skin; the tongue became black and dry; the

teeth covered with sordes; and the gums sphacelated, where calomel had been administered too freely, with the view of obtaining its constitutional effect. Mr. Mardon, formerly of the Bombay Medical Board, and now residing in London, has described, in *Johnson's Medical Magazine*, a fatal fever of this kind, which prevailed, during the month of June 1818, in a detachment of the Bombay European regiment, doing duty in the garrison of Surat. The detachment consisted of ninety-four men, who occupied a damp, ill-ventilated building, formerly used as a mint; and, being much crowded together, fifty-three out of the whole were attacked by severe fever. The leading symptoms of this, were great prostration of strength and irritability of stomach, acute headache, pallid lips and tongue; transparent, horny-looking gums; generally sunk and cadaverous expression of the countenance, though in some it was much flushed. The pulse was frequently hard and strong. Some of those attacked were brought to the hospital in a state of stupor, from which they did not recover for several hours. Calomel was at first used, in order to obtain its constitutional effects; but the head soon became swollen, the parotids enlarged and indurated, accompanied by sphacelation of the gums, and other symptoms of putridity. The treatment was successfully changed to moderate blood-letting, sponging of the body with cold water and vinegar, and saline effervescing draughts, to relieve thirst and reduce the heat of skin, followed by the free use of bark combined with diluted sulphuric or nitric acid.

Post-mortem Appearances.—A minute examination of the bodies of those who died of remittent fever in Gujerat, was made in every instance; and though the morbid appearances varied somewhat in different cases, they were in general such as to identify similarity of action having existed in all varieties of fever. They were in no respect different from what I afterwards met with in the remittent fevers of Bombay and other parts of India, excepting that, in Gujerat remittent, there were indications of the cerebro-spinal axis and great nervous centres being in a better marked state of *hyperæmia* than they were observed to be in other instances. Most of the fatal cases at Bombay occurring in men of more advanced life, the intestines were more frequently softened or ulcerated, the liver enlarged and pale from former disease, the spleen pulpy, the lungs adhering to the parietes of the chest, with the accompaniment of fibrinous polypi in the heart. It will be impossible, within the small compass allowed in the *Journal*, to give the detail of particular cases. I must content myself, therefore, with giving as specific and correct an analysis of the appearances as the subject will admit of.

Brain and Spinal Column.—The immediate cause of death seemed to be effusion of serum betwixt the pia mater and tunica arachnoides, or into the lateral ventricles. If the patient died early, venous congestion of the substance of the brain was strongly marked, by the cut surface of the medulla becoming instantly covered with numerous bloody points, and by the pia mater being of a livid colour. But when the patient died emaciated, the bloody points were fewer, and the vessels of the pia mater contained large quantities of air. Where delirium had existed, the pia mater was inflamed through the whole substance of the brain. The theca vertebralis always contained more or less fluid, and

in one instance its cellular sheath was very vascular, and had a gelatinous appearance throughout. In this case a considerable quantity of albuminous fluid had been effused betwixt the tunica arachnoides and the pia mater of the medulla spinalis, immediately opposite the seventh dorsal vertebrum. The white substance of the medulla oblongata and me lulla spinalis, and the ganglia of the great sympathetic, were in a highly vascular state.

Chest.—The lungs were only fully collapsed in one instance, and in this there was no appearance of pulmonary disease. In all other cases there was general congestion of the lungs, or pulmonary apoplexy of their substance, the ecchymosed tumours being harder than the rest of their structure, appearing, on a section being made of them, to be formed by the extravasation of frothy blood into the part. In one instance there were yellow crude tubercles in the lungs, and here the pleura costalis contained eight ounces of bloody serum. From half an ounce to six drachms of yellow serum were generally found in the pericardium.

Abdomen.—The liver, which had in many cases suffered from previous chronic disease, was in a state of congestion, attended with extravasation into the hepatic parenchyma. The gall bladder was filled with thick black bile. The mucous coat of the stomach was very red and vascular near the pyloric orifice, sometimes softened and mammillated, and in one case, where the mouth sphacelated from mercury, it was of a dark leaden colour. Occasionally where the stomach was vascular, the mucous coat of the duodenum, which contained an ash-coloured slime, was normal; but the mucous lining of the jejunum and ileum was, in recent cases, red and vascular, and in those of some weeks' standing of a dark grey colour. The spleen was soft and pulpy. In many instances the mesenteric glands were enlarged, and the pancreas more indurated than natural. The kidneys, when examined, were in a state of hyperæmia.

Pathology of Remittent Fever.—Intermittents so far differ from remittents that the nervous irritation and increased action of the circulating system are of only temporary duration, and terminate by an increase of the secretions, functionally suspended; while the latter, either associated with a more phlogistic state of the blood, more acute irritation and hyperæmia of the cerebro-spinal axis, and great nervous centres, are seldom disposed to a crisis, or return of natural actions, after the exacerbations, unless assisted by the interference of art. There were certainly occasional cases of remittent, under the influence of change of air, and removal from the site of the *miasma* causing them, which terminated by a remarkable increase of biliary secretion, constituting what is called *hepatic erethism;* but in general the *vis a tergo* and the natural power of the constitution were not sufficient, as in intermittents, to overcome the resistance offered by the capillaries of the skin, and the congestion of other secretory organs; and when no longer capable of doing so, simple remittents assumed an inflammatory or continued form. The phenomena attending remittent fevers in Gujerat, and in other parts of India, indicated compound affection of the nervous, circulating, and secretory systems; the first of which, in new comers, seemed to be *primarily* affected by the sedative action of *malaria* on the blood; but, in cases of relapse, and in the constitutions

of long residents, rendered extremely sensitive of sol-lunar influence, altered and diseased secretion of some of the chylopoietic viscera were first observable in the chain of morbid effects; and to this succeeded the nervous depression, and subsequent irritability of the sensorium and nerves, which became manifest. The same reflex action of abdominal irritation, caused by improper food, or the presence of worms, in cases of infantile remittent fever, is seen to produce, *secondarily*, such an increase of carbon in the blood, and accumulation of blood in the venous system and right side of the heart, as often take place in *idiopathic* cases of remittent fever, wherein such morbid effects are considered *primary*. The arrangement of fevers into *idiopathic* and *symptomatic* is therefore of questionable propriety, as would be the forms of cholera, which are, under general epidemic influence, *primary*, but often *secondary* when arising from improper food, or the abuse of intoxicating liquors, favoured by the action of *endemic causes*, preventing the complete arterialization of blood in the lungs, and increasing the quantity of excrementitious matter in the circulating fluid.

Those who have witnessed pernicious remittent fevers, like those of Gujerat, must have remarked that when the bile was deficient or changed in quality, the appetite languid, and the tongue loaded, there were symptoms of muscular debility, pallor, and coldness of the feet and skin, and increase of the intestinal mucus; that the nutrition of the body was imperfectly performed, the qualities of the fluids consequently changed, accompanied by constitutional irritability, followed by increased temperature of the skin and volume of the pulse. They must have also become sensible how absolutely necessary to good health are the depurating functions of the liver and intestinal surface, assisted by those of the kidneys, skin, and pulmonary respiration; and can scarcely wonder that in fever, where all these functions are suspended, the best directed efforts of the physician should frequently prove unsuccessful for the cure of so formidable a malady, as is the marsh remittent of warm climates. I will endeavour to analyze and describe these successive changes as they occurred in fever, knowing how necessary it is, for the object of successful treatment, to attentively watch and consider them during the progress of the malady, and in all its modifications.

Though unacquainted with the exact nature of the poisonous exhalation, or *malaria*, causing intermittents and remittents, we are yet capable of tracing its effects on the human constitution. These vary in grade according to the greater or less intensity of the cause applied, and the predisposition of individuals affected; giving rise to every type and modification of fever. The only visible morbid changes produced by such cause are to be traced in the vascular system of the several organs, with whose functions in a healthy state, and with the laws that regulate them, we become acquainted through the discoveries of physiology. Combining such knowledge with the *post-mortem appearances* in Gujerat remittent, and in other diseases, such as cholera, having an *algide* stage, I ascribe the whole series of febrile phenomena to loss of vitality in the blood, consequent accumulation of it in the right side of the heart and venous system, hyperæmia with defective action in the brain and spinal marrow, and temporarily suspended secretory functions of the liver, intestinal surface, kidneys, and skin. These, with the

suspension of the respiratory functions, and necessary chemical changes of the blood that produce animal heat, give rise to the cold stages both of fever and of cholera. The subsequent reaction and excitement accompanying the hot stages of intermittents, and the exacerbations of remittents, and also the febrile stage of cholera, are clearly referrible to an increased flow of blood through the spinal marrow and dependent nerves, which are in a state of hyperæmia with increased motion, and give rise to those copious secretions of bile and diarrhœal discharges from the intestines, by which nature, in healthy constitutions, endeavours to relieve herself, and to restore the blood to a healthy purity. The pathological condition, then, of simple and inflammatory remittents, must be considered as *hyperæmia* and *active irritation* of the spinal marrow and nervous centres, which supply the great abdominal organs of secretion. When these organs are in a healthy state, and capable of relieving themselves from the increased determination of blood to them in febrile action, by supporting an increase of their secretions, remittent fevers are met with in their mildest form, and are curable by the gentlest appliances of art. But when, (through intensity of malaria, previous disease, original weakness of constitution, or too great pressure or oppression of the circulating fluid in its vessels,) becoming incapable of carrying on their ordinary functions, they are left in a state of asthenic hyperæmia or congestion, and sometimes of secondary inflammation, with diminution of the red particles of the blood, there are respectively constituted the congestive and typhoid modifications of remittent. These, as far as I have been able to discover, are the phenomena or series of changes which take place in primary or idiopathic fever.

In relapsed cases of the remittent, however, where no fresh application of malarious causes could be deemed instrumental in producing disease, morbid excitement appeared to commence with derangement of the digestive organs, and irritation of the intestinal mucous membrane; which irritation, extending through the great sympathetic to the cerebro-spinal axis, probably produces the same change on the blood and secretions, as those associated with the phenomena of idiopathic fever. It is only in this manner that the periodicity of infantile remittent fever, when not of primary malarious origin, can be accounted for. In constitutions rendered irritable by long residence within the tropics, the same reflex nervous irritation is produced by a change from a tropical to an extra-tropical climate, by the influence of cold on the skin, or the prevalence of east wind, without the aid of fresh malaria.

Treatment of Remittents.—It would be impossible for me to here enter on the mode of operation by which particular remedies equalize morbid excitability and diminish febrile action, and I must, therefore, limit myself to the general system of treatment which I have found most efficacious in remittent fever. The general principle kept in view, with the constitution in a state of sthenic plethora, was to reduce the quantity of blood in the vessels, and diminish nervous excitability, by one or more general blood-lettings of twenty ounces from the arm, according to the fulness of the pulse, and tone of the constitution. Immediately after the bleeding, from ten to fifteen grains of calomel, uncombined, were given along with a saline effervescing draught, com-

bined with a drachm of ipecacuanha wine and an equal quantity of nitrous ether. The head, being the part chiefly affected, was shaved, and the cold douche employed to reduce febrile heat during the exacerbations; or cloths, wetted with vinegar and cold water, were kept constantly applied to the head, the hands and arms also being sponged with the same cooling lotion. The administration of the calomel, when the stomach was free from irritability, was followed by a brisk purgative of compound senna mixture and Epsom salts, or compound powder of jalap, in order to remove the diseased secretions from the bowels. During the next exacerbation, if a second general bloodletting were required, it was repeated with caution; for in the country of Gujerat, where the thermometer, in the month of October and part of November, rose to 90° at three o'clock in the afternoon, the pulse of those suffering from remittent was found at this hour 130, and seemed to possess even firmness and strength in cases where the constitution had been worn down by former disease. At the period I first went to Gujerat, it was a common practice, in accordance with the doctrines of the day, to bleed largely in all cases of fever, under the erroneous supposition that fever and inflammation were much akin, and required the same amount of depletion. A very short experience in the remittents of the country convinced me of the danger arising from such a practice; and I soon learned that in so hot a climate I could not follow such a deceitful guide as the pulse, to direct me in deciding on a repetition of bleeding. The medical men of that day were too apt to form their ideas of treating fever from the vascular action accompanying its exacerbations, and to overlook the irritability of the sensorium and nervous system, which no amount of bleeding could diminish. In accordance with prevailing opinions, I was therefore induced, in the earlier years of my practice, to repeat the venesection two or three times; but became convinced, by subsequent experience, that more than two general bleedings were seldom necessary in inflammatory remittents disposed to assume a continued form. The coagulum of the blood, in the fevers of Gujerat, was for the most part very loose, and in large proportion to the serum; and as such a condition of it indicates no very great tolerance of the constitution for large abstractions of blood, and remittents of this kind were, after a few days' continuance, disposed to assume the typhoid character, it was better not to have recourse to repeated venesection. The local determinations, which become developed in the paroxysms, are more safely controlled by leeching or cupping, and by giving disulphate of quinine, in divided doses, along with small quantities of antimonial powder or ipecacuanha, and effervescing draughts with diuretics, to prevent the recurrence of the paroxysm, and obviate secondary inflammatory effects.

Mr. Mardon, in his treatment of the Surat remittent before alluded to, repeated the bleeding two, three, and four times, and says:—"In many, the first bleeding was sufficient to arrest the disease. Calomel was only used as a purgative before the administration of bark, which was administered with diluted sulphuric or nitric acid, before the exacerbations. Forty-eight men, out of fifty-three attacked, completely recovered by this treatment, after the practice of endeavouring to obtain the constitutional effects of calomel had proved most unsuccessful, and

was attended by extreme symptoms of putridity in the constitutions of the patients subjected to this mode of treatment." I would not, however, recommend, even in extreme cases, more than two general bleedings, knowing how easy it is, when quinine is properly administered in the remissions, to control the febrile heat and excitement of the exacerbations by cold douche to the head, and ablution of the body, where there is neither diarrhœa nor symptoms of inflammation in any of the abdominal viscera. The cold ablution of the body, during the height of the exacerbation, usually reduced the pulse twelve or fifteen beats for nearly an hour after its use, and if the heat of skin increased much and was persistent, it was necessary to repeat the remedy, and to keep the patient's head cool by wet applications. Every increase of irritation, every exacerbation of the remittent, appeared to commence in the brain, and extend along the spinal marrow, and were, in severe cases, subdued by the application of leeches to the temples. But douche to the head, and general cold ablution, are the remedies most to be relied on in moderating the exacerbations of Gujerat remittents, whose paroxysmal returns are to be prevented by quinine or the bark. In using cold ablution, it was not deemed necessary to delay it till the height of the exacerbation; for to this there are objections, of which not the least is that febrile heat is allowed to greatly increase, and to be reduced with less chance of a favourable termination.

In the mild remittent form which occasionally affected Europeans, and is that generally met with among the natives of India, an emetic of five grains of ipecacuanha, given at the commencement, was successful in breaking the chain of morbid phenomena; and when followed up, at bed-time, by small doses of mercury and chalk, a purgative the succeeding day, and then quinine to prevent the return of the paroxysm, seemed to be the best remedial measure for this kind of fever. Sometimes, in Europeans, a single general bleeding seemed necessary; but there were very few cases among natives of India wherever it was requisite. With the latter, mercurials should be sparingly employed; as the constitution and habits of our *Sipahies* are such as to render the free use of calomel dangerous to them. These men, when not on duty, expose themselves without clothing to the air, bathe daily in cold water, and cannot be strictly controlled in their diet. To such, the constitutional effect of mercury proves most prejudicial; and in regiments where the practice is resorted to, the annual invalid list is found increasing to a remarkable extent, the men becoming martyrs to rheumatism and glandular disease.

In the congestive form of the remittent it was usual to administer quinine combined with calomel, antimonial powder, and scammony, if the bowels were confined; or with small doses of opium when there was diarrhœa. The patients were put in a hot bath at the temperature of 105°, and when laid again in bed, were allowed to drink freely of equal parts of saline and camphor mixture, in doses of three ounces, with the addition of half a drachm of nitrous ether. Partial congestions, marked by a great increase of heat in the forehead, or at the pit of the stomach, were relieved by cupping or leeching; and in such cases friction of the spine with stimulating embrocations, or the application of a large blister to the part, should never be neglected; as here

the state of *hyperæmia*, with *defective innervation*, must be considered as the source of the symptoms attending this modification of fever. Stimulating enemata, composed of castor oil and oil of turpentine, may be also usefully employed in such cases. Whenever it may be deemed advisable to relieve the general distention of the vessels by bleeding, venesection should be performed while the patient is in the hot bath.

When the fever assumed the typhoid character, and there was increased temperature of the surface, the general principles of treatment were—tepid sponging of the skin; saline mixture, with diuretics, enemata, or gentle purgatives; and light nourishment, such as thin arrowroot, with small quantities of wine; or the yolk of an egg, mixed up sugar, nutmeg, wine, and hot water. As soon as the symptoms showed any tendency to remission, sulphate of quinine, with antimonials, saline mixture, and diuretics, were given to restore the healthy energy of the nervous and circulating systems; and to depurate the blood, by increasing the urinary secretion. In this modification of remittent, the chemical condition of the blood is altered, its red particles are deficient, and sometimes, from containing urea, it produces symptoms of oppression and coma. The employment of certain diuretics, therefore, at this stage of disease, forms an important element of treatment.

Infantile Remittent.—It is not my intention to enter at length on the consideration of this disease, which, in the form of gastric and bowel complaints, associated with febrile symptoms, proves so fatal to the infants and children belonging to newly-arrived European regiments. The relation of this disease to the tropical remittent of the adult, has been already pointed out; and the same morbid enlargement of the muciparous and mesenteric glands, congestion of the liver, softened and enlarged condition of the spleen, red vascularity of the mucous surface of the stomach and intestines, engorgement of the lungs, congestion of the brain and serous effusion into its ventricles, are observable after death in both. The remittent of infants, according to my own observations, either happened as a primary disease, caused by malaria; or occurred as a secondary one, proceeding from gastric irritation, induced by cold, damp weather, improper food, and teething. Like other fevers, I have found it terminating in mesenteric enlargement and marasmus, by which the child was reduced to extreme emaciation; or it occasionally ended in albuminous nephritis, with effusion into the abdomen, and anasarcous swelling of the legs.

The treatment of this disease must be conducted on the principle that it is more a disease of irritation than is the remittent of the adult; and the abstraction of blood to relieve local affections of the head or stomach, must be used more sparingly and with greater caution. The safest and most effectual management of this disease is to give repeated emetics of ipecacuanha wine, at the commencement of symptoms indicating the exacerbations, and to follow up these by administering small doses of mercury and chalk, with Dover's powder, or a saline draught containing ipecacuanha wine, after having previously used a warm bath at the temperature of 98° or 100° of Fahrenheit. If the abdominal pain appears great, a hot poultice or mustard cataplasm should be laid over the stomach, and diseased secretions from the bowels are to be removed by gentle doses of castor oil. The cerebral excitement and disposition

to drowsiness accompanying this disease are so frequently the effect of reflex nervous irritation from the abdomen, that the too free use of calomel or of purgatives must be avoided; for, when the Indian treatment of infantile remittent was to purge children with calomel till the greenish bilious motions became of a healthy yellow colour, I have seen patients thrown into a state of coma by the continued irritation kept up in the mucous membrane, and from which they soon recovered on this treatment being discontinued. Small doses of quinine, given with mercurials, are useful in preventing the recurrence of paroxysms in the child as well as in the adult.

IV. CONTINUED FEVER.

The ardent fever which prevails among recently-arrived Europeans, during the hot weather, is essentially a disease of the vascular and secreting systems, brought on by elevated temperature and excessive spirit-drinking, acting on the irritable fibre and excitable constitution of those in robust health. The changes effected in the blood by such causes, acting through the medium of the cerebro-spinal axis, are probably the same that take place in genuine remittent fever; but the continued ardent fever of the hot season must be held as a disease which originates quite independently of malarious causes, and is more nearly allied to gastritis and acute hepatitis than to the usual forms of pure remittent. Among bodies of men previously exposed, in marshy countries, to malaria, it may be met with assuming all the characters of continued inflammatory remittent; but in such cases it must be rather regarded as relapsed remittent, than a genuine continued ardent fever. It is, as before said, more exclusively connected with accelerated arterial action, and tonicity of the vascular system, than are other kinds of fever; though, under great exposure to the sun and excess in drinking, it is found occasionally in a congestive form.

The symptoms characterizing this type of fever, are—greater pain of the head and flushing of the countenance, more persistent heat of skin, firmer and harder pulse, tongue whiter or more furred, urgent thirst and higher coloured urine, accompanied by a red ferrety expression of the eyes, as in men bordering on attacks of delirium tremens. In the *sthenic* form of this particular fever, the headache is chiefly frontal, being attended with aversion to light, contracted pupil, and heat of the scalp, with flushing and heat of the neck and breast. But in the *asthenic* or congestive variety, which follows excessive drinking, and much exposure to the heat of the sun, the patients complain of vertigo, accompanied by dilatation of the pupil, a clammy and sometimes rather cold state of the skin, a low soft pulse, and other symptoms of depressed nervous energy. More severe attacks of this congestive type present the appearance of *coup de soleil*, the patients being in an insensible state, the face livid, the eyes suffused, the breathings stertorous, accompanied by hot skin, and an oppressed labouring pulse, which sinks rapidly when venesection is employed at the outset of the attack.

From the great similarity existing between continued tropical fever, and the hepatic and cerebral affections of Europeans in hot climates, some have denied the existence of anything like continued fever within the tropics; but a few weeks' experience, during the hot season in

Gujerat, and among lately arrived European troops, would soon convince them of the fallacy of such an opinion. This fever, like other similar affections, is met with, modified from a strong and well developed action of the vascular system, where general blood-letting can be borne well, to a congestive state of the blood-vessels, with depressed nervous energy, where bleeding, except by cupping, must be used with the greatest caution. In most cases of this disease, the stomach, after death, presents a highly vascular appearance of its mucous coat, accompanied by general congestion of the mesenteric veins; the liver is engorged with blood, the gall-bladder distended by green or amber-coloured bile, and the membranes and substance of the brain in a state of extreme congestion. In many cases, the liver and stomach seem to be the organs primarily affected, being followed in the course of the disease by cerebral symptoms; but the development of those presenting themselves in this fever varied considerably, according to the exciting causes to which patients had been exposed; cerebral ones being the more prominent where solar radiation had the lead in bringing on the attack, and hepatic or gastric ones, where excessive drinking had produced the fever.

The treatment must consist of general blood-letting, according to the circumstances and severity of the case; repeated cold affusion, to subdue the increased temperature of the skin; calomel, with antimonial powder and opium; active purgatives, with leeching and cupping of particular parts, where symptoms of inflammation or congestion appear. Quinine, with saline mixture and diuretics, become necessary after the more active symptoms are subdued; and in this type of fever, the constitutional action of mercury may be employed with more success than in cases of marsh remittent. The superior efficacy of this remedy, in the continued ardent fever, appears to depend on the blood being more fibrinous than in remittents.[1]

[1] Clinical cases in illustration, and much more relative to continued fever, are here necessarily omitted, the limits allotted to me having been already somewhat extended.

CASES OF REMITTENT FEVER TREATED IN THE EUROPEAN GENERAL HOSPITAL DURING THE YEAR 1839.

Months.	Names.	Age.	Diseases.	Times bled generally.	Number of ounces.	Times bled locally.	Number of ounces.	Other Remedies used.	No. of days in Hospital.	Days before admission.	Result.	Remarks.
Jan. 28	J. F.	8	Febris Remittens Infantilis.	0	0	1	2	Mercury and chalk, with Dover's powder, and the warm bath; quinine, combined with ipecacuanha and opium.	9	0	Cured	This patient had been frequently subject to fever and enlarged spleen, and his bowels were relaxed. The present attack arose from lunar influence, the moon being full on the 29th.
April 3	T. D.	31	Febris Remittens.	2	22	5	12	The warm bath, mercury, with ipecacuanha and extract of gentian, purgatives, and afterwards quinine mixture.	20	9	Cured	The symptoms, in this case, were gastric; the febrile symptoms not well developed, except from the severity of the headache.
April 10	A. T.	45	Febris Remittens.	0	0	1	3	Two blisters to the nape of the neck and head, calomel with James's powder and opium, the warm bath, purgatives, and diuretics; and ultimately, quinine, combined with a diuretic.	24	several	Cured	Previous to admission, this patient had been delirious, in consequence of which her head was shaved, and cold applied. The evening febrile exacerbation was feeble, and head symptoms continued for some time after her admission.
April 11	H. S.	39	Febris Remittens.	0	0	1	5	Cold lotion to the head, antimonial mixture, with diuretics and tincture of hyoscyamus, purgatives, sponging the body when hot, calomel, with quinine, ipecacuanha, and opium.	5	several	Died	Evening exacerbations, in this case, strong; much pain in the perinæum, accompanied by dysuria, and infiltration of urine into the cellular substance of the perinæum and penis, which sloughed. Previous to admission, the fever had been intermittent. After death, the liver was found enlarged, the spleen pulpy, the stomach natural, the mucous coat of the large intestines softened, and there were several small ulcers on the mucous coat of the urethra, by which the urine had escaped into the cellular substance of the penis. Substance of the brain somewhat more vascular than natural.
April 13	J. D.	33	Febris Remittens.	1	16	3	8	Calomel and purgatives, effervescing draughts to relieve nausea, leeches to the stomach and head; subsequently, calomel, with quinine and ipecacuanha.	20	2	Cured	The leading symptoms, in this case, were gastric, accompanied by irritability of stomach, and vomiting of bile; the febrile exacerbations were irregular, and sometimes came on during the night. The pulse was generally 100.
May 3	E. N.	26	Febris Remittens.	0	0	2	8	Calomel and purgatives, antimonial mixture, with diuretics, cold applications to the head, quinine mixture after the remission.	8	3	Cured	A slight case, attended by considerable affection of the head.

May 6	M. C.	19	Febris Remittens.	0	0	0	0	No treatment.			Died	This patient died soon after admission into hospital. Body was not examined.
May 7	T. H.	22	Febris Remittens.	0	0	2	8	Calomel and purgatives, warm bath, no quinine.	14	0	Cured	The symptoms, in this case, were gastric, and more inflammatory than febrile.
July 21	J. L.	31	Febris Remittens.	1	25	1	41	Quinine, with mercury and ipecacuanha, blisters and purgatives.	40	5	Cured	Was of a stout habit. Mouth became sore.
Aug. 10	J. T.	25	Febris Remittens.	1	16	4	16	Calomel, with James's powder and purgatives, and a blister to the right side; quinine subsequently given.	48	1	Cured	Was exposed to the sun and rain. Principal symptoms, hepatic; gums became tender.
Aug. 29	A. M.	16	Febris Remittens.	1	16	3	15	Mercury, with antimonial powder and purgatives, tartar emetic solution and diuretics, subsequently quinine mixture.	11	5	Cured	Leading symptoms, cerebral. A blister applied between the scapulæ.
Sept. 2	T. J.	17	Febris Remittens.	1	18	4	22	Diaphoretics, purgatives, quinine, mercury, and ipecacuanha.	32	6	Cured	Habit plethoric; chief local symptoms gastric.
Sept. 2	L. F.	39	Febris Remittens.	1	16	2	12	Calomel, with ipecacuanha and purgatives; a large blister between the scapulæ and at the epigastrium.		2	Died	A man of dissipated habits, who had a shivering fit on the second day of his admission; became comatose, and died. Had been only four months in the country; and previously suffered from gastro-enteritic symptoms. After death, the peritoneal covering of the liver was found opaque, and thickened, the lungs adhering posteriorly, and the heart hypertrophied and dilated.
Sept. 4	J. D.	50	Febris Remittens.	0	0	0	0	Calomel, with quinine and James's powder, blister to the epigastrium, effervescing draught, with diuretics, wine, and the warm bath.			Died	This was a person of colour, and a pauper, admitted in the last stage of the disease, with hiccup and typhoid symptoms. After death, the pulmonary and costal pleuræ were found adhering, with considerable serous effusion at the base of the skull, and fibrinous polypi in the auricles and ventricles of the heart.
Sept. 15	J. P.	21	Febris Remittens.	0	0	7	28	Leeches to the epigastrium and temples, a blister between the scapula and epigastrium, the warm bath, calomel, with quinine, ipecacuanha, wine, and purgatives.	41	2	Cured	A person of a florid complexion, and only seven months in the country; whose respiration was oppressed, pulse feeble, skin clammy, and hand numb.
Sept. 27	W. B.	34	Febris Remittens.	0	0	5	27	Calomel and purgatives, the warm bath; subsequently quinine, combined with diuretics.	10	4	Cured	Four years in the country, at Calcutta. Principal symptoms, cerebral and hepatic.
Sept. 30	W. S.	20	Febris Remittens	1	12	1	9	Calomel, with tartar-emetic, and purgatives; during the remission, calomel, with quinine and ipecacuanha.	13	4	Cured	This was not a severe case.

Months.	Names.	Age.	Diseases.	Bled genly	No. of oz.	Bled locly.	No. of oz.	Other remedies used.	Days in Hos.	Days before admiss.	Results.	Remarks.
Oct. 4	J. O	36	Febris Remittens Nervosa.	0	0	2	10	Calomel, with quinine, ipecacuan, and opium, along with effervescing draughts, diuretics, and wine, cold douche to the head, and warm bath.	16	5	Cured	Twelve years in the country, and very dissipated in his habits. Had severe dysentery about two years ago; was convulsed at the new moon of the 7th, and much relieved by the cold douche to his head.
Oct. 7	T. J.	34	Febris Remittens. Nervosa.	0	0	2	15	An emetic at admission, subsequently calomel, ipecacuanha, and opium, and purgatives, until the fifth day, when he was drowsy, and had convulsive twitchings; from which period, calomel, with quinine, antimonial powder, and opium, was given, along with cold douche to the head; warm bath and wine. Was repeatedly blistered on the right hypochondrium.	39	Not known	Cured	In this case the patient complained of uneasiness in the site of the right quadratus muscle; and there was a defined swelling, anteriorly, from the margin of the right ribs to the umbilicus, attended with hepatic sound. The pyrexial symptoms were, at first, intermittent, and increased in severity, being attended by much nervous trembling.
Oct. 11	T. S.	23	Febris Remittens.	1	20	5	29	Calomel, with quinine and purgatives; an emetic given at admission.	22	1	Cured	This man was of a stout make, ruddy complexion, and had just arrived from England. The symptoms were chiefly cerebral; and were most relieved by the cupping-glasses applied at the nape of the neck.
Oct. 14	S. S.	18	Febris Remittens.		20	4	21	Calomel, with ipecacuanha and opium, purgatives, tartar-emetic solution, with diuretics, cold douche to the head, and subsequently quinine.			Cured	A person of fair, ruddy complexion, and just arrived from England. Leading symptoms gastric, but attended by much cerebral affection.
Oct. 19	W. C.	18	Febris Remittens.	0	0	4	8	Calomel, with antimonial powder and purgatives, warm bath, and subsequently quinine.	12	8	Cured	Symptoms commenced with ague, followed by hepatic affection.
Oct. 19	R. B.	25	Febris Remittens Congestiva.	2	36	5	29	Tartar-emetic solution, with diuretics; subsequently, calomel, quinine, ipecacuanha, and wine, a blister to the nape of the neck, and purgatives.	18	1	Cured	This was a man belonging to the 15th Hussars, lately arrived from England. He was of a fair complexion and sanguineous temperament; who was attacked on the 7th of October, at the period of the new moon, by hepatic erethism, or bilious cholera, for which he was bled to ℥xx.; used other remedies, and was six days in hospital. In the present attack, the first symptoms were much purging, and tendency to cerebral congestion, so that the 16 ozs. of blood taken from the arm pro-

											duced fainting. After reaction had taken place, the large intestines were affected with inflammation, and a bleeding to ℥xx. on the second day after his admission, was borne well, and produced immediate relief.
Oct. 22	T. R.	29	Febris Remittens.	1	20	3	20	Was cupped on the back of the neck, and had afterwards a blister applied; cold douche to the head, the warm-bath diuretics, mercurial purgatives, and an emetic; subsequently quinine mixture was given.	18	1	Cured	This was a case where cerebral congestion immediately succeeded the first attack, and was attended by loss of power in the right hand and forearm, much dilatation of the pupils, but fulness of the pulse. After the head-affection was removed by leeching, cupping, one general bleeding, and a blister, a shivering fit and pyrexial symptoms succeeded, attended by bilious erethism. These were removed by an emetic, purgatives, and quinine.
Oct. 23	T.C.B.	18	Febris Remittens Congestiva.	0	0	1	9	A blister between the scapulæ and epigastrium, after the application of the leeches, cold douche to the head, and warm bath; calomel in small quantity, with quinine, antimonial powder, and diuretics, turpentine enemata, and hot foot bath, wine, and nourishment.	3	5	Died	This was a young gentleman of the Indian navy, who had been treated on board of ship previous to admission. During the night of the 17th he had a slight chill, followed by pyrexial symptoms; took an emetic and a saline purgative, afterwards took calomel three times daily, with antimonial powder, by which his gums became tender; was sick, and bled from the nose on the night of the 18th; had febrile exacerbations on the 20th, 21st, 22nd, and became delirious after the last; had been taking purgatives and diaphoretics during this time. Was exposed, previous to his illness, to the influence of the sun and wet.
Oct. 23	A. C.	39	Febris Remittens.	1	16	0	0	Mercurial purgatives, effervescing draughts, with nitrous æther; subsequently, sulphate of quinine.	6	3	Cured	This case was not severe, and was almost an intermittent.
Oct. 24	J. C.	43	Febris Remittens.	0	0	1	6	Calomel, with ipecacuan and opium, purgatives, and diaphoretics, until a remission took place; subsequently, quinine, combined with calomel and ipecacuan; blisters to the nape of the neck, diuretics, and purgatives.	37	1	Cured	The subject of this case was one of Her Majesty's 15th Hussars, recently arrived from Europe. The leading symptoms were gastric, accompanied by feeble circulation, cold, damp skin, and tendency to cerebral congestion.
Oct. 28	C. T.	24	Febris Remittens.	0	0	4	19	Calomel and purgatives, solution of tartar-emetic with effervescing draughts and nitrous æther, until a remission was produced; subsequently, quinine, and a blister to the epigastrium.	38	Not stated	Cured	This was a man of the 15th Hussars, recently from Europe. The symptoms were not severe, but gastric, and were much relieved by leeching of the epigastrium.

Months.	Names.	Age.	Diseases.	Bled genly	No. of oz.	Bled locly.	No. of oz.	Other remedies used.	Days in Hos.	Days before admiss.	Results.	Remarks.
Oct. 29	R. C.	20	Febris Remittens.	0	0	3	13	Calomel and purgatives, effervescing draughts, with nitrous æther; subsequently, quinine, with calomel and ipecacuanha.	14	Not stated	Cured	This was not a severe case, and the patient's gums became slightly tender.
Oct. 30	A. M.	32	Febris Remittens.	1	12	2	9	Calomel, ipecacuanha and opium, with purgatives; subsequently, sulphate of quinine.	15	Not stated	Cured	This patient had been only two months in the country, and had an attack of symptomatic fever on the 20th of September, was bled, purged, and took quinine; discharged the 9th of October.
Nov. 5	J.W F.	18	Febris Remittens.	0	0	2	13	Calomel, ipecacuanha, and opium, with castor oil, the warm bath, and an emetic; subsequently, mercury and chalk, with Dover's powder and quinine, repeated blistering of abdomen, and anodyne enemata.	51	8	Cured	This was a case of remittent fever, where the constitution was weak and scrofulous, the pyrexial symptoms mild, and the evening exacerbations not strongly marked, as the diarrhœa and gastro-enteritic affection, which were severe, seemed to prevent their development. The patient had been eight days ill previous to admission. Mouth became sore.
Nov. 8	S. H.	5	Febris Remittens Infantilis.	0	0	0	0	Ipecacuanha, wine, emetic, warm bath, and castor oil.	2	several	Died	This was a case of neglected fever, terminating in diarrhœa. The child's extremities at admission were anasarcous.
Nov. 13	R. B.	25	Febris Remittens.	0	0	3	13	Warm bath, calomel, with quinine, ipecacuanha, and opium; purgatives.	13	0	Cured	This was a case of relapse, in which the leading symptoms were gastric and required leeching of the abdomen. Gums became tender.
Nov. 19	J. C.	42	Febris Remittens.	0	0	2	8	Cold douche to the head, calomel, quinine, and ipecacuanha, with purgatives, blister to the head and between the scapulæ, effervescing draughts, with diuretics.	35	5	Died	The patient had been long in the country, and when admitted at the period of the full moon in November, his manner was nervous, like that of a person who had been drinking, his pulse feeble, eyes suffused, bowels loose. The leading symptoms were cerebral, but after death the liver was found of a pale colour, and its right lobe contained a large abscess. The pia mater presented arborescent redness, and an ounce and a half of fluid was effused at the base of the skull. There were fibrinous polypi in the right auricle and ventricle.
Nov. 24	D. H.	29	Febris Remittens.	1	20	2	9	An emetic; afterwards, solution of tartar-emetic, with nitrous æther and tincture of hyoscyamus, till a remission was produced; subsequently, quinine, combined with mercury and chalk, ipe-	11	several	Cured	This patient came from Guzerat, and had severe head symptoms, attended by irritability of stomach, his tongue was dry and dusky red, his pulse full.

Dec. 3.	A. W.	21	Febris Remittens.	0	0	3	16	Calomel, ipecacuanha, and purgatives, cold douche to the head and warm bath, a blister to the nape of the neck, effervescing draughts, with diuretics; after a remission on the fourth day, quinine, with calomel, ipecacuan, and opium.	9	4	Died	This was a man of the 15th Hussars, recently arrived from Europe. His face was flushed and hands tremulous, and on the third day after admission he had subsultus, his tongue was dry and brown, his teeth were soon after covered by sordes, and his tongue became black. A small quantity of wine and arrowroot was given on the fourth day. After death, the incised substance of the brain showed many bloody points, the heart contained yellow polypi, and the mucous glands of the lower part of the ileum and cæcum were ulcerated.
Dec. 6	J. M.	26	Febris Remittens.	1	Not known	2	8	Calomel, ipecacuanha, opium, and purgatives, cold douche to the head and hot foot-bath, effervescing draughts, with diuretics, a blister to the nape of the neck, quinine, with calomel and opium, and latterly, wine.	23	6	Died	This was a woman of dissipated habits and much addicted to drinking, in whom the febrile symptoms were congestive, and marked by tenderness at the epigastrium, irritability of stomach, a feeble pulse, beating 116, delirium, drowsiness, diarrhœa, and lastly, miliary eruption on the skin. There was no inspection of the body.
Dec. 14	J. B.	—	Febris Remittens.	1	16	2	6	Head shaved and cold lotion applied to the head, calomel, ipecacuanha, and opium, with purgatives, the warm bath and effervescing draughts, with diuretics; subsequently, quinine, combined with blue pill and ipecacuanha.	33	8	Cured	This patient, who belonged to the 15th Hussars, had suffered from intermittent fever in October, and was ill for several days in barracks before admission. The febrile symptoms were irregular, and combined with a considerable degree of hepatic affection.

The preceding is an abstract of the prevailing character of remittents, admitted into the General Hospital at Bombay, for 1839, having formed part of the author's Annual Report on the diseases for that year. It is here appended as sufficient illustration of the general system of treatment requisite in remittent fevers. The quantities of blood abstracted, generally or locally, are noted in the columns, and when coupled with the prevailing character of the fever, in particular cases, and the other remedies prescribed, may in some measure serve as a practical guide to those inexperienced in the types and modifications of such fevers.

32, Oxford-square, London, January, 1849.

BIBLIOGRAPHICAL RECORD.

On Femoral Rupture, its Anatomy, Pathology, and Surgery, with a new mode of operating, applicable to Cases of Strangulated Herniæ generally. With Plates. By John Gay, F.R.C.S., Surgeon to the Royal Free Hospital. 4to. pp. 97. London: Samuel Highley, 32, Fleet-street. 1848.

The subject of Hernia has at all times demanded, and has of late years attracted, the most serious attention of practical surgeons, both on account of the gravity of the affection, the interest, anatomically and pathologically attached to it, and the excessive mortality which has accompanied it. Not even have the most severe operations of surgery, and those of great magnitude, been attended with so little success as the proceeding employed for the relief of a strangulated hernia; this important fact has been attentively considered, and its causes have been inquired into, by several able surgeons, who have consequently been led to suggest modes of practice differing from that commonly employed.

The author of the present treatise has had the same object in view; and his chief aim in writing his work is to recommend a new mode of operating in femoral hernia, by which he hopes to render the proceeding less difficult and less liable to be followed by bad results.

The greater portion of the work is taken up with the consideration of the anatomy of femoral hernia, and certainly the author has entered most minutely into this part of the subject, and has evidently taken a great deal of trouble to demonstrate that which we think has already been well investigated by other anatomists, and which is generally well understood.

It is not our intention to examine, in detail, part of the treatise; but there are one or two points about which Mr. Gay has opinions of his own, and in which he differs from other anatomists; we shall, therefore, briefly call attention to them.

He considers that erroneous notions have been entertained with respect to that structure which has been termed Hey's ligament, and that, in reality, that which was described by Mr. Hey as such, is not the process of fascia lata, prolonged from the falciform border, but that it consists of a band of fibres situated in the deep layer of the fascia lata, beneath Poupart's ligament. These are its relations as described by the author:—"It is situated at some little distance from and beneath the crural arch, the iliac extremity being on its femoral side; but as the whole band has a greater tendency to the horizontal direction than the arch, it follows that, on its way towards the pubes, it attains the level of the posterior thin edge of the ligament about midway between its extremities. To this edge it is then united by means of a narrow and firm membranous slip—the floor of the inguinal canal—which ceases to exist at the point at which the thin edge referred to merges into the semilunar or free edge of Gimbernat's ligament. It surrounds and supports the front wall and pubic angle of the *sheath* of the femoral vessels, the *orifice* of which it at the same time determines. Thus it intervenes between the deep thin edge of the crural arch and the first portion of Gimbernat's ligament, and the sheath of the vessels, and may well be considered as the 'deep crural arch.'" (p. 15.) And further, in a note, he says:—"For reasons which I am about to adduce, I believe that this ligamentous band, and not the falciform process of the fascia lata and its fibrous appendage, is the structure to which Mr. Hey directed especial attention, and termed the 'femoral ligament'; at all events, that its importance demands for it a distinct recognition as such."

It certainly is difficult to understand precisely, by Mr. Hey's description, what he meant; that described in the plate, in the "Surgical Observations," appears to be the process from the falciform border of the fascia lata, and is quite unlike that delineated as such by our author, in his plate, both in appearance and situation. There is no doubt, however, of the importance of this structure as forming part of the ring, and necessarily exciting pressure upon the neck of a hernia.

The author describes, with minuteness, a band of fibres formed in the substance of the femoral sheath; above and behind that which he terms Hey's ligament; he considers that they are the same as those depicted by Hesselbach, and that they have a considerable share in forming the stricture.

Mr. Gay's views, with respect to the cause of the stricture in femoral hernia, are somewhat at variance with those generally entertained. Amongst other tissues, he enumerates the so-called Hey's ligament and Gimbernat's ligament as forming the stricture, and then says:—"These ligaments are the most constant seats of stricture external to the neck of the sac. It is generally admitted that, as alleged by Sir A. Cooper, the contracting force which these several structures are capable of exerting upon a hernial protrusion, resides equally in every part of the ring or circle which they co-operate in forming. This view, however, is not in unison either with the results of experience derived from operations, or with the inferences to which a careful consideration of the disposition of the parts in question must lead. The femoral ligament exerts its force upon an impacted tumour in the direction from *before backwards*, and *this* force would inevitably be greater in amount than *that* which Gimbernat's ligament is capable of exciting in the *transverse* direction, since the *former* would meet with the antagonism of an unyielding body—the ramus of the pubis—whilst the *latter* would only be opposed by the extensile tissues of the pubic septum of the sheath, and the soft parts on its iliac side." (p. 48.)

After having described the nature and treatment of hernia, and entered into the causes of death, the author finishes his work by describing his operation, the principle of which is non-interference with the hernial tumour. "The incision by which the seat of stricture is to be reached, is made at the farthest possible distance from the protrusion, and through tissues free from the results of morbid change. It is adapted to all cases where the seat of stricture is external to the sac." (p. 90.)

We refer the reader to the work itself, for the mode which Mr. Gay employs in the performance of the operation.

The main novelty in the proceeding is the making a small incision, contiguous to, but not over, the hernial tumour. Relieving, or attempting to relieve, the stricture, without laying open the sac, is nothing new. Of course, the same objections which apply to that mode of procedure, obtain here as well, perhaps even with greater force, as the incision recommended is so limited, and away from the tumour, that if in the course of the operation it be found necessary to open the sac, additional difficulty would exist, and it would be necessary to make an extended cut, which, if possible, should always be avoided.

It requires the test of experience to prove how far this proceeding may be employed, for as yet the author, it appears, has only tried it in some half dozen cases, which he has recited, and he does not tell us in how many cases he has attempted it, and found it unsuccessful. We are fully convinced of the great advantage of disturbing the tumour as little as possible, and not wounding the peritoneum, if the stricture can be relieved by other means; for this reason, therefore, in some cases, we believe that this operation may prove highly useful; on the other hand, it cannot be doubted, that in numerous instances it will be found inapplicable.

We cannot finish the notice of this work without remarking, that Mr. Gay deserves great credit for the interest and zeal he has evidently employed in

the investigation of the subject ; we may almost say, he has been over zealous, and in discussing the anatomy of Femoral Hernia has somewhat complicated it. The book is well got up, amply furnished with notes, and illustrated with three expressive plates.

Practical Treatise on the Diseases Peculiar to Women ; illustrated by Cases derived from Hospital and Private Practice. By Samuel Ashwell, M.D., late Obstetric Physician and Lecturer to Guy's Hospital, Third edition. pp. 772. London : 1848. (Continued from p. 64.)

Part II begins with some remarks on the difficulty of the Diagnosis in complicated Uterine Disease, and on the various modes of diagnosis: the value of evidence from the *History of Symptoms, Digital Examination, the Speculum, the Stethoscope, and the Discharges*, being considered seriatim. The importance it deserves is given to the speculum; on the one hand, the author combats its indiscriminate use ;—on the other, he insists on the benefit to be derived from its employment, in all the otherwise concealed diseases of the cervical region of the uterus. It is only now, that the speculum is beginning to assert its true utility. It is probable, however, that the speculum is not such a novel instrument in this country as some have imagined. Not long since we saw the invention of the speculum uteri publicly ascribed to M. Recamier; it is, however, a fact that Harvey, in his Exercises on Generation, *describes the use of the speculum in a case of sterility caused by an ulceration of the cervix, and which was cured by injections, the lady subsequently bearing children !* Some excellent remarks are made by Dr. Ashwell on the difficulty of indicating the state of the os uteri from the state of the discharges. A pathology having such a basis must be unsound. An error of this kind vitiates to a very considerable degree the work of Mr. Whitehead of Manchester; an error which we are surprised has not hitherto been pointed out. This gentleman has constructed a table of 2,000 cases, which rest not on specular examination, but on the recollections which the patients themselves had of this or that coloured discharge. That is to say, 2,000 women were taken, their previous discharges and abortions inquired into, and from this very unsubstantial evidence, tables are constructed showing the comparative frequency of purulent and mucous leucorrhœa, and the frequency of abortion in the two forms of discharges. As Mr. Whitehead considers purulent leucorrhœa to be invariably the result of "suppurative inflammation," his tables assume to show, upon such evidence, the frequency of abortion from suppurative disease of the uterus. Such rash conclusions are greatly to be deprecated.

In discussing the Prognosis of Organic Disease of the Uterus, Dr. Ashwell meets the question—Can we, at the commencement or early part of a case, distinguish positively between malignancy and non-malignancy ? Dr. Ashwell frankly confesses his inability to do so in all cases ; and he lays it down as a rule that, when there are doubts, "it is right to treat the case as though it were not malignant disease ; and, at all events, for a time, to give the assurance—a most important item in the treatment—that whatever else the disease may be, it is *not* cancer."

He observes, very forcibly, that some threatening cases recover, and some cases of carcinoma remain stationary, or nearly so, for many years. If such patients were told the whole of our medical doubts, they would be speedily destroyed. He says,—

"There are few women who could endure the sudden divulging of the nature of such a malady as cancer, without most injurious depression ; and there are certainly not many who, with a conviction of his fatality, like the sword of Damocles, hanging over them, could practise as they ought, and pursue as they must, for every beneficial purpose, the self-denial on which its restraint mainly depends."

On the important subject of cancer, Dr. Ashwell relies implicitly on the views of Dr. Walshe.

The chapter on Fibrous Tumours of the Walls of the Uterus is of extreme importance. Dr. Ashwell, in opposition to the views of Andral, Carswell, Bayle, Lobstein, and others, maintains that these tumours are *always* cancerous and malignant in their nature. The following is a summary of the reasons he adduces in favour of this view:—

"1. They possess the structure of compound adventitious cysts, the basis of this class of heterologous formations. 2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue, they are identical with schirrus. 3. In hardness, occasionally justifying the application to them of the term slow-cancer, they are not to be distinguished from the varieties of carcinoma already mentioned. 4. They occur very frequently in conjunction with growths of undoubted malignancy in other parts of the uterus. 5. And, lastly, they possess one especial attribute of malignity—incurability."

The objection may be made to these postulates, that they do not include that power of assimilating the material intended for other tissues, so characteristic of carcinoma in other organs, or that special cachexia by which cancer destroys life. To this, the reply of Dr. Ashwell is, that though they often remain in a state of isolation, producing little constitutional disturbance; they do, nevertheless, in some cases, both involve other tissues in destruction and self-assimilation, and destroy life by the cachexia they induce. These phenomena, though rare, are seen often enough to prove, in the author's opinion, the possession, of even the most undoubted qualities of cancer, by this description of tumours. It is important to recognise these tumours, when they are tuberculous in their seat, from polypous growths. The following will present the differential diagnosis:—

POLYPUS.	FIBROUS TUMOUR.
Absence of linear structure . . .	Linear structure.
Generally a single tumour	Often more than one tumour.
Great vascularity	Little vascularity.
Absence of sensibility	Never insensible.
Hæmorrhage from the growth itself.	Hæmorrhage from the mucous tissue.
Removal by ligature	Non-removal by ligature.

The treatment Dr. Ashwell recommends, is chiefly the administration of iodine, abstinence from sexual intercourse, mild antiphlogistic remedies, narcotics, particularly in the form of suppositories, conium and poppy injections, cold to arrest hæmorrhage, aperients with the same view, and the avoidance as much as possible of physical and mental exertion. A caution is given as to the use of the ergot in restraining hæmorrhage in these cases; the author has found it increase the hæmorrhage.

The observations on the Induction of Premature Labour, in organic uterine or ovarian disease are most valuable; and this subject is one for which the profession is especially indebted to Dr. Ashwell. It is proved very clearly, that in organic disease, if pregnancy be permitted to proceed to the full term, inflammation, suppuration, and the extension of the disease takes place to such a degree as to destroy the patient; while in cases in which premature delivery is induced, the dangers produced by pregnancy are greatly diminished, and few if any ill results follow from the careful performance of the operation for exciting abortion. The time recommended by Dr. Ashwell for the operation in organic disease, involving any part of the uterus, is about the sixth month. Up to this time, pregnancy and the development of the uterus rarely give rise to any very great amount of mischief. There is hardly a more satisfactory point in the modern improvements of obstetrics, than the extension of this operation to cases in which parturition or prolonged pregnancy is almost necessarily or inevitably fatal to the mother.

A chapter is devoted to Organic Diseases of the Cervix and Os Uteri.

Authors have thought the monthly molimen of menstruation a predisposing cause of these affections; Dr. Ashwell holds a modified opinion, maintaining that the catamenial discharge is a reason why they do not progress rapidly during the menstrual era, and pointing to the very significant fact, that these disorders progress most rapidly after the final decline of menstruation. Of cancer, and its especial seat in the cervix uteri, an excellent description is given. Dr. Ashwell reiterates with emphasis a former assertion of his, originally made in the Guy's Hospital Reports. He believes,—

"That hard tumours of the cervix, and indurated puckering of the edges of the os (conditions which frequently terminate in ulceration) may be melted down and cured, by the topical application of iodine, aided by the recumbent position, abstinence from sexual intercourse, cupping on the loins, a mild unstimulating and often a milk diet, gentle aperients, narcotic injections into the vagina, and the almost daily use of the warm hip-bath."

These remarks, it should be said, are extended by Dr. Ashwell to "malignant tumours." Undoubtedly all the best writers agree in attributing the origin of cancer uteri to congestion and ulceration of the organ. As the advanced treatment of these distressing cases, pursued from the most simple prophylactics to the most severe measures, are so almost entirely limited to the control of the progress of the disorders, and the mitigation of suffering, we shall not pursue it further than to say, that all Dr. Ashwell's observations are marked alike by caution, sagacity, and a high tone of benevolence. His greatest reliance is on the *nitrate of silver* and the *oxide of zinc*, before the disease has approached its fatal termination. The operation of excision of the os and cervix is condemned in the vast majority of cases by the results which have followed it, but Dr. Ashwell would fain hope that—

"Perhaps as uterine diseases are so much better understood now, and the absolute necessity for *early* examination by the speculum, as well as the finger, so generally acknowledged, opportunities may occasionally present themselves for its justifiable performance."

The next part of Dr. Ashwell's valuable book, that which is devoted to the Simple or Syphilitic Ulcerations, of the os and cervix uteri, we shall pass over, as we shall shortly have another occasion to enter fully upon this subject, when reviewing the second edition of Dr. Henry Bennett's work. In connexion with other forms of ulceration, Dr. Ashwell describes, in graphic terms, the corroding ulcer of the uterus, scarcely less dangerous, though somewhat less painful, and more rare, than carcinoma. There is no induration, no schirrous deposit; but the uterine tissues are corroded and destroyed by a specific ulceration, which Dr. Ashwell happily compares to lupus of the face. The ulcerative process eats away the healthy tissue, biting as close as it can, so that an awful amount of ulceration may exist, the tissues in its vicinity being perfectly healthy.

"The consequence is, that unlike what occurs in advanced cancer,—where, owing to the new deposits and carcinomatous growth, the cavity of the pelvis is filled, and the uterus becomes fixed and immoveable,—in corroding ulcer, especially in its last stages, there is an empty space in the pelvis, and the remaining portion of the womb is especially moveable. In the only two cases I have seen, the fœtor attending on the ulceration was most intense, and probably peculiar to the disease."

In a case we recently treated, we had an opportunity of verifying the graphic fidelity of these remarks. In this disease, after the failure of lunar caustic, narcotics, and palliative remedies, Dr. Ashwell is of opinion, that, favourable circumstances concurring, the operation of excision of the cervix uteri might be quite justifiable.

Cauliflower Excrescence.—As regards frequency, this disease lies between corroding ulcer and cancer, being more frequent than the former, but less so than the latter. We quote Dr. Ashwell's definition:—

"A morbid growth of the os uteri, consisting of minute ramifications of

arteries, connected by a flocculent tissue, and covered with a secreting membrane. Its surface has somewhat of the granulated feel of the brocoli; it bleeds on slight handling, and almost constantly pours forth a watery discharge. It varies in size, is nearly painless, and proves its malignancy by returning after removal either by the knife, ligature, or caustic."

The treatment consists of the attempt to cure by radical measures, as the ligature, caustic, or excision, by which life is often prolonged; and the palliative plan, consisting of the cold douche to the back, aperients, local abstractions of blood, avoidance of physical stimulus and other sources of excitement, the cold alum hip-bath, astringent injections, etc.

Occlusion and Rigidity of the Cervix Uteri,—Which are causes both of sterility and difficult parturition, find a place in Dr. Ashwell's work. The author directs attention to this malformation, or disorganization, as it is met with in parturition. We may sum up this chapter by saying that, when the os uteri is in a state of perfect occlusion, incision for the formation of an artificial os is the safest proceeding. In extreme and unyielding rigidity of the os uteri, after waiting fruitlessly for dilatation by the pains, Dr. Ashwell prefers incision to either dilatation by the finger, or non-interference. The cases appended to this part of the work are highly interesting. Many of Dr. Ashwell's expositions on this point are highly original.

On the subject of Uterine Polypus we shall only refer to Dr. Ashwell's opinion of the best treatment. On the whole, he prefers removal by ligature, especially in large polypi, to avulsion, enucleation, or excision, though he admits the many advantages possessed by excision, particularly in small growths, where they can easily be drawn within reach of the scissors or the bistoury, and where there is less danger of hæmorrhage than in larger tumours. Appended to the chapter on polypi, are some admirable observations on polypus complicated with fibrous tumour, malignant growth of the uterine cavity, spongoid tumour, and ulceration of the mucous lining of the uterus.

The next department treated of by Dr. Ashwell, namely Displacement of the Uterus, is one of growing importance. The various conditions requiring treatment under this head, are consequently described with considerable minuteness. The obstetric practitioner will here find a full account of relaxation, prolapse, and procidentia of the uterus; elongation of the cervix uteri; inversio uteri; anteversion and retroversion; anteflexion, retroflexion, and hernia, of the impregnated and unimpregnated organ. An impartial description is given of the various mechanical measures by which these mechanical derangements are to be remedied; and it is with these principles and details of treatment, that we shall chiefly concern ourselves; as, to enter into all the minutiæ of cause, pathology, and effects, would require not only the space occupied in the work of Dr. Ashwell, but a volume itself.

Briefly, then, in relaxation and slight prolapse, the recumbent position, tonics, and astringent injections, are generally sufficient. Dr. Ashwell lays considerable stress on the use of a strong alum hip-bath, daily, at a temperature of 95°. In procidentia, the first point is the return of the organ; generally the reposition of the uterus is easy, but occasionally fomentations, leeches, and scarification, are required before the procident uterus can be passed up the vagina. It often happens that, in such cases, ulcerations of the uterus require as much attention as the mechanical displacement; in these cases the return is impossible, and we have no choice but to amputate the organ, or to render its displacement as little injurious as possible to the constitution of the patient. Of pessaries, Dr. Ashwell entertains a very high opinion; in procidentia he prefers them to any of the operations which have been devised for contracting the vagina, or to the various abdomino-uterine mechanisms which have been employed for supporting the uterus by pressure upon the perinæum. Of the various pessaries in use, Dr. Ashwell prefers the circular, or boxwood ring-pessary, as the one least likely to produce inconvenience or mischief to the vagina or neighbouring organs, and as not inter-

fering, in any way, with the performance of the sexual functions. Of Dr. Ashwell's account of inversion of the uterus, we shall only observe, it is carefully and practically composed; but it does not offer any very salient points for criticism or quotation.

The uterine versions and flexions demand a longer notice at our hands. Very great discrepancy of opinion exists respecting these affections. Thus Dr. Meigs, for instance, one of the most truthful of living writers, says that, in an extensive practice of thirty years, "he has not been able to meet with more than *one single decided sample* of anteversion." On the other hand, Lisfranc, the great Bobadil of uterine pathology, asserts, that anteversion is infinitely more frequent than retroversion; and this is "from hundreds, he might say, *thousands of observations*." (!) Authors, in giving their statistics of malposition of the uterus, ought to mention whether the woman was in the recumbent or upright position when examined; and perhaps, by so doing, some discrepancies, at present so startling, may be reconciled. Dr. Ashwell also correctly observes: "All practical men know that the uterus varies naturally in its position, in its degrees of mobility, and in the influence exerted upon it (as to position) by a loaded or empty rectum or bladder."

This is strictly true. The uterus is very seldom in precisely the same position in any two different subjects, or in the same subject at two different times, so that any man running wild upon the subject of flexion and version, would only have to number his cases of displacement by the number of cases he had examined. Undoubtedly, all these malpositions, particularly retroversion, are occasionally met with, and require careful and continued treatment; but the assertion of their unreal frequency by some writers, leads many practical men to disbelieve their existence altogether, and to consider this subject merely as a branch of empiricism. Dr. Ashwell's treatment of such cases is rational and worthy of the confidence of the profession; it consists of mechanical reposition, the recumbent posture, the reduction of the uterus to its natural size, local astringents, and the support which can be derived from a well-adapted pessary. The use of the "sound" as a means of diagnosis is strongly reprobated; he considers it likely to *make*, in the first instance, the malpositions which it subsequently *diagnosticates*. Dr. Simpson's other mechanism for retaining the retroverted uterus *in situ*, after it has been replaced, is disapproved, and spoken of, as the "ivory one-pronged fork." Dr. Ashwell declares that he has seen the most serious mischief follow upon its use.

We are obliged to dismiss the subject of DISEASES OF THE OVARIES very cursorily; though the section relating to ovarian dropsy, and its treatment, would have been well worthy of extended analysis, did our space admit. The following words convey Dr. Ashwell's estimate of the hold the operation of ovariotomy is likely to have upon practice:—"This dangerous operation, like all other violent innovations, will ultimately come to be correctly appreciated. The good sense of medical men may be for a time partially compromised, by too favourable reports of the safety and success, not only of frightful surgical operations, but of unjustifiable interruptions of natural processes; but, by and bye, these things are weighed in the balances and found wanting, and calmer judgment consigns them to oblivion."

The last section of the work is devoted to DISEASES OF THE EXTERNAL ORGANS OF GENERATION, in which many highly original observations and views of treatment are given. As a supplement, some account is rendered of the morbid effects of UNDUE LACTATION; but to this we can merely refer.

It remains for us to give our general estimate of Dr. Ashwell's work; and this we do with considerable pleasure. It is essentially practical. The author is more intent upon what he has *seen* at Guy's and in private practice, than upon the bibliography of his very important and comprehensive subject. Excellences and omissions arise out of this circumstance; but we are glad to say that the former much preponderate. If there be no elaborate

disquisitions on the views of many foreign authors, there are never wanting full and faithful descriptions to guide the English practitioner among the difficulties he may meet with. This is indeed the chief excellence of the work. The young and the experienced practitioner may safely *treat* from its pages. Dr. Ashwell has aimed at this, rather than at originality; though, in the course of the work, many new and important observations are met with. Throughout every one of the 772 pages, to which the work extends, there runs a sound and sagacious intelligence. The value of old things is maintained, not because they are old, but because they are useful; new things are almost invariably treated with a cordial welcome; and groundless innovations are treated as they deserve. This is high praise; but it is merited by the work.

HINTS TOWARDS THE FORMATION OF A MORE COMPREHENSIVE THEORY OF LIFE. By S. T. COLERIDGE. Edited by SETH B. WATSON, M.D. 12mo., pp. 94. London: 1848.

The Unity of Human Nature, according to Mr. Coleridge, is composed of two elements combined, viz., soul and body. Human life, as treated of by him in the work before us, is merely the life of the body. His hypothesis as to the nature of this life, we can only give in his own words:

"The constituent forces," says he, "of Life in the living human body, are: first, the power of length, or REPRODUCTION; second, the power of surface (that is, length and breadth), or IRRITABILITY; third, the power of depth, or SENSIBILITY. With this observation I may conclude these remarks, only reminding the reader, that Life itself is neither of these separately, but the copula of all three; that Life, *as* Life, supposes a positive or universal principle in Nature, with a negative principle in a particular animal,—the latter, or limitative power, constantly acting to individualize, and, as it were, figure the former. Thus, then, Life itself is not *a thing*—a self-subsistent *hypostasis*—but an *act* and *process*, which, pitiable as the prejudice will appear to the *forts esprits*, is a great deal more than either my reason would authorize, or my conscience allow me to assert, concerning the Soul as the principle both of Reason and Conscience." (Pp. 93-94.)

Mr. Coleridge denies the propriety of dividing the objects with which we are surrounded, into animate and inanimate; and maintains that the irreducible bases of chemistry, the various forms of crystals,—nay, even the rocks, the mountains, and the globe itself, share with us the gift of Life!!

The little volume, with a glimpse at the general scope of which we have now presented our readers, strikingly illustrates, in every page, the peculiarity of the mind of its author. In immediate juxta-position are flashes of brilliant genius, and ebullitions of what most men will designate as only elaborate nonsense. It is to be presumed that Mr. Coleridge always had, in his own mind, ideas corresponding to the words he has written; but certainly it often happens that the language employed is not calculated to convey any distinct ideas to others. In some of his most promising paragraphs, we frankly confess that we have failed to discover any meaning. For example: at page 53 we are told, "that the oneness of space and time is the predicate of all *real* being"; and in explanation (?) it is said—"to form the first conception of a *real* thing; we state both as one in the idea,—duration. The formula is: $\overline{A=B}+\overline{B=A}=\overline{A=A}$." We paused long at this explanation, but failed adequately to grasp the idea which the philosopher had struggled to embody. Mr. Coleridge's essay on life, notwithstanding its obscurity and eccentricity, bears so strongly the impress of originality and genius, that we have thought it right to bring it under the notice of our readers.

Memoranda on Poisons. By T. H. Tanner, M.D. 24mo. pp. 63. London: 1848.

Medical manuals for the waistcoat pocket are generally, we think, of questionable utility; yet as they are in demand, we cannot wonder at authors and publishers producing them. So far as *tests* are concerned, the information conveyed in so tiny a book as that now before us must, for medico-legal purposes, be nearly valueless. The notes on treatment, however, may assist the memory of the young practitioner in some unexpected emergencies. The book, though not intended by the author to be so used, is very likely to be employed by those students who, after years of idleness, are obliged to cram their heads with the minimum of information exacted by the Boards.

Wonders Displayed in the Human Body in its Endurance of Injury. From the Portfolio of Delta. With Etchings by the Author. 8vo. pp. 39. London: 1848.

This pamphlet is "a brief catalogue of pathological eccentricities", after the fashion of Dr. Millingen's *Curiosities of Medical Experience*. We are told of Miss Lucy P. (an American lady), who passed sand at the same time from the mouth, nose, and ear; of various cases of luminous emanations from the human body; of spontaneous combustion; knife swallowing; recovery from extraordinary injuries, etc. etc. Delta mentions "wonders" seen by himself. Thus, he says—"We have ourselves taken a small basin-full of brain from the fractured cranium of a man whom we had previously restored from suspended animation."—p. 36.

The Introductory Lecture, delivered at King's College, London, on opening the Medical Session of 1848-49. By William Fergusson, F.R.S., Professor of Surgery in King's College, Surgeon to King's College Hospital, etc. pp. 32. London: 1848.

The address of Professor Fergusson is well worthy of perusal, more particularly by the student, and the younger members of the profession. It is forcibly written, and contains solid and sensible advice. We remark with pleasure, that diligence in all departments of medical study are—showing the sound discretion of the learned Professor—equally indicated; and that no one branch is unduly exalted above the rest.

The Serpentine "as it is" and "as it ought to be": and the Board of Health "as it is" and "as it ought to be". By Edward John Tilt, M.D. pp. 67. London: 1848.

The principal part of this pamphlet recently appeared as leading articles in the Lancet. Dr. Tilt exposes the absurdity of having a non-medical Board of Health. His demand for a removal or abatement of the Serpentine River nuisance must, we imagine, at once be complied with, if his allegations as to its pestilential nature be not greatly overstated, which we do not believe them to be. It seems very strange to be true, that fifty acres of stagnant water, in the midst of Hyde Park, should be under the special protection of the President of the Board of Health! But we fear it is a fact which cannot be denied. "Will it be credited," says Dr. Tilt, "that Lord Carlisle is not only *First Commissioner of Woods and Forests*, and therefore interested (or should be so) in the proper conservation of public grounds—he is not only *President of the Board of Health*, and therefore bound to set an example of removing nuisances, forbidden by his own official instructions—but he is also the Patron of the Serpentine Bathing Club!"—p. 17. Dr. Tilt writes in a lucid and powerful style: and the matter, as well as the manner of the pamphlet, seem calculated to command attention.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

RECENT MEMOIRS ON SCURVY.

The recent prevalence of scurvy has arrested the attention of the profession, and called forth a variety of valuable memoirs. The following is an alphabetical list of the papers now before us, regarding which we propose making a few remarks :

1. Anderson, Dr. A., Glasgow.—*Edinburgh Monthly Journal*, Jan. 1847.
2. Andral, M., Paris.—*Gazette Médicale*, 1847, p. 534.
3. Baly, Dr., London.—*London Medical Gazette*, vol. I, for 1841 and 1842.
4. Bellingham, Dr., Dublin.— *Dublin Medical Press*, 21st July 1847.
5. Chatin et Bouvier, MM.—*Journal du Chimie Médicale*, Mars 1848.
6. Christison, Dr., Edinburgh.—*Edinburgh Monthly Journal of Medical Science*, June and July 1847.
7. Curran and Aldridge, Drs.—*Dublin Quarterly Journal of Medical Science*, August 1847.
8. Fauvel, Becquerel, and Rodier, MM.—*Archives Générales de Médecine*, Août 1847.
9. Foltz and Frick, Drs.—*American Journal of the Medical Sciences*, January 1848.
10. Garrod, Dr., London.—*Edinburgh Monthly Journal*, Jan. 1848.
11. Laycock, Dr.—*London Medical Gazette*, 2nd April 1847.
12. Lonsdale, Dr., Carlisle.—*Edinburgh Monthly Journal*, August 1847.
13. Ritchie, Dr., Glasgow.—*Edinburgh Monthly Journal*, July and August 1847.
14. Shapter, Dr.—*Provincial Medical and Surgical Journal*, 2nd June 1847.
15. Stiff, Mr.—*Medical Times*, June 1847.

A late popular lecturer, in the Edinburgh School of Medicine, used to address his class in this fashion: "Gentlemen, I have nothing to say on Scurvy, we don't see it now-a-days; those of you who intend to enter the navy must, however, read up the subject." Such language may have been excusable twenty, or even five years ago, in Edinburgh; for Dr. Christison informs us, that no case had been met with for more than thirty years in the infirmary, till the late outbreak occurred. At the present time, however, Scurvy appears to us to have great claims on the attention of the profession. The surgeons of our navy and merchant vessels are no longer the interested parties; indeed such is the discipline on board our ships, and so carefully is the dietary of the sailor adapted to the circumstances to which he is exposed, that many seniors of the "cockpit" have not seen the disease. But the last two years have shewn that the hospital physician, the general practitioner, the "union doctor," and dispensary apothecary, are now called upon to examine into its causes and treatment.

It had become a matter of general belief, that Scurvy died with the last century; for, excepting in badly equipped vessels, in horribly managed jails, and lunatic asylums, the disease did not manifest itself. The increased cultivation of succulent vegetables, and their abundant use amongst all classes of the community, made it in the highest degree probable that Scurvy would

not again appear in this country And he would have had large powers of prophecy who could have foretold, a few years ago, that Scurvy would reappear in the years 1846 and '47, and that so extensively, as to be met with, not only on the banks of Tay in Perthshire,—in the "Kingdom of Fife," and the mountain ranges and secluded glens of Ettrick and Yarrow, but also in the fertile Lothians, the sunny vales of Cumberland, the rich demesnes of ecclesiastical York, and the still more genial clime of our south-western counties; that it would lay prostrate, not only the ill-fed, badly clothed, and houseless poor,—the natural victims to disease,—but also the well-to-do artisan, the labourer, and shop-keeping class, who could get their bread and beef and beer;—not only the inmates of prisons, or houses of refuge, and the denizens of the wretched hovels of our pent-up cities, but the sons of rural toil—the village maid, and the muscular, iron-framed "navvie," whose avocations were pursued under the free canopy of heaven, with balmy breezes, and smiling nature around them! Had the profession been conversant with the disease, or studied its history with care, the partial deficiency in the potatoe crop, during some few years, would have surely elicited from them words of warning. It was far otherwise, however; and when the crop of 1845 shewed a marked deterioration, men merely ran to and fro in search of animalcules—the supposed destroyers of the tuber; and there seemed to be great alarm for a time. This panic, which led to nothing practical or suggestive, subsided in the spring of 1846, to be re-awakened, however, in a tenfold manner in the autumn of that year, by the announcement of a total failure of the potatoes in many counties, but particularly in Ireland. The cry for provisions became loud and general—Government appointed a potatoe commission!—issued a large "blue book," and opened the ports and the public purse to the Irish. Private charity lent a powerful hand in the purchase and distribution of food and clothing. These noble efforts were successful to a certain extent, but nothing could atone for the want of fresh vegetables,—hence arose Scurvy, dysentery, and fever, affecting large numbers of the working population, not in Ireland alone, where the sufferings were however truly dreadful, but in several districts in the United Kingdom, generally accounted less liable to the influences of faulty living. We mention these circumstances at the outset, as there is no longer any doubt as to the fact of errors of diet and Scurvy standing to each other in the relation of cause and effect,—at least in the minds of those who have carefully digested the history of the past, or have had opportunities of observing the late outbreak of Scurvy. Potatoes and other vegetables were in a great measure destroyed in 1846, and Scurvy appeared in the ensuing winter and spring of 1847 from Perth to Cornwall; the same crops were tolerably good in 1847, and there was no manifestation of the disease.[1] Medical evidence is rarely more conclusive than this.

Symptoms and Causes.—In proceeding to analyze the late contributions made to our periodical literature, on the subject of Scurvy, we feel that we shall best contribute to the interests of our readers, by saving them the labour of consulting authorities, and do more ample justice to the memoirs under review, by adverting briefly to the leading characters and diagnostic signs of the disease. Its past history, by shewing how much irreparable mischief resulted from confounding it with other diseases, fully justifies us in this procedure. The accurate descriptions of Rousseus and Wierus, soon after the middle of the sixteenth century, were so overlooked in the seventeenth century, that we find Eugalenus, an oddity of a Dutchman (half astrologer and half physician), confounding various cutaneous diseases,

[1] Two gentlemen whose observations in 1847 would embrace about 300 cases, report that each of them has seen but one case during 1848. The field of their observations is very extensive—including town and country—rich and barren soils.

hypochondriasis, etc., with Scurvy. This attempt to amalgamate diseases of the most varied and opposite character under the head "Scorbutus," continued in credit amongst the learned of that period; and there was scarcely any check upon its absurdity, till the standard work of the accurate and philosophical Lind appeared in 1757. Indeed, few diseases, considering its frequency, have been so little understood; and seldom, if ever, has ignorance been attended with such direful results to humanity, as in the visitations of Scurvy. In the numerous wars, protracted sieges, and long voyages of discovery, of the last few centuries, this scourge has played a prominent part; not only decimating its victims, as the sword and climate may do, but prostrating, and almost annihilating, whole crews and bodies of men. And though such calamities cannot occur again, to any great extent, grievous errors are likely to be committed by inattention to the pathognomonic signs. During the last visitation, mistaking Scurvy for purpura was very common; and in one provincial hospital, to which we had access, Scurvy reigned for more than a month, before its true nature was detected! Many scorbutics, throughout the country, were treated for rheumatism; others, for debility and bruised legs; and not a few were classified as bilious fever-patients,—owing, we may suppose, to the change in the colour of the skin: and we are well aware that bleeding and heroic remedies were occasionally adopted. Nay, more, we had patients brought to us who had suffered severe scarification of the gums, followed by the application of nitrate of silver at the hands of practitioners of long experience, but of little knowledge. So that the surgeons in Louis IX's Christian campaign, in 1260, who cut away the gums of the scorbutic in a most unchristian manner, have had their vile imitators in the middle of the nineteenth century!

The leading features of Scurvy, are: the sallow, pale, dingy hue of the complexion, neither icteroid[1] nor anæmic, and assuredly not betraying a cancerous diathesis; languor, despondency, and aversion to exercise; muscular or neuralgic pains in the limbs, and occasionally in the loins; swelling, stiffness, and contraction of the joints,—more particularly the knee; a peculiar hardness of the tissues around the affected joints, which resists the strongest pressure of the fingers, and the impossibility of pinching up the skin, which seems glued to the parts beneath, as if tightly stretched over them; the skin considerably discoloured, and much variegated, of a yellow or reddish brown, and violet, or even darker tint, similar, in all respects, to that of a severe bruise. The same appearance is produced by subjecting any part of the body to slight friction or pressure. The gums are sore, swelled, spongy, and livid; in severe cases, concealing the teeth, or hanging like fleshy excrescences, and presenting a dark, spongy, sloughing mass; the teeth becoming loose, and the breath remarkably offensive. Hæmorrhage takes place from the gums (the most common variety), from the nose, intestinal canal, bronchi, and, more rarely, from the bladder. Petechial spots, surrounding, generally, the roots of the hairs, appear on the legs and thighs, and, less frequently, upon the arms and body. These dark spots are often mistaken for purpura and lichen lividus. Wounds, ulcers, and cutaneous disorders, are materially influenced; and if one part of the system be weaker than another, it is specially selected by the disease. The respiration is much affected by the slightest exertion, and fatal syncope often attends a sudden change of position; the pulse is not much changed, and the tongue is little at fault; the skin is frequently dry at the onset: the urinary secretion, and state of bowels, afford no constant indications; the appetite is good, but owing to the state of gums, can seldom be gratified; the digestive powers seem generally in good order. A case of Scorbutic Amaurosis was seen by Dr. Anderson, but none of our authors have noticed the affection of Nyctalopia, by no

[1] M. Fauvel considers the colour of skin to resemble the fading yellow colour of a disappearing bruise.

means an uncommon symptom, as it would appear from Blane (*Diseases of Seamen*, 3rd ed. p. 455) and Grant (art. "Nyctalopia", *Cyclop. Pract. Medicine*), amongst scorbutic subjects in warm climates. Authors are not decided as to whether the gums or limbs are first affected : at sea, we should expect the former, owing to the use of hard biscuit, etc., for food.[1]

Little need be said of the pathological appearances. The colour of the skin, the state of the gums, the contracted joints, with effusion into the subcutaneous tissues, and the fibrinous and sanguineous effusions met with amongst the muscles, and between these and the skin ; beneath the peritonæal coat of the intestines, or between the mucous and muscular tissues, like patches of ecchymosis ; or between the periosteum and bones of the lower extremites and jaws ; and signs of hæmorrhage in the mucous passages already alluded to, constitute all that is worthy of attention in this brief sketch.

Diagnostic signs.—We do not see how Scurvy can be mistaken for any other disease,—the spongy, livid gums, and sallow, dingy hue of skin are pathognomonic ; then the extensive ecchymoses in the limbs, and the stiff contracted joints, with effusion into the neighbouring tissues : the appearance of the disease about the end of winter, or early in spring, continuing for weeks, always in connection with a change of diet, and always remediable by fresh vegetables and lemon juice, render the diagnosis simple and complete.

We see no grounds for multiplying varieties of the disease, as some of our authors have done. It savours too much of the system which justly fell under the censure of Lind and Sydenham a century ago. It may be difficult to arrange under any nosological head many of the abnormal states of the body characterized by debility, impaired nutrition, and cachexia, which are met with in seasons of scarcity of food—especially of fresh vegetables. This is no reason, however, for classifying them under the head of Scorbutus—a term embracing a well-defined disease. In the absence of a better term, Dr. Christison took refuge under the "epidemic constitution" of Sydenham, and Dr. Lonsdale fell back upon the "cachectic condition" of more remote authors. As the term incipient is used, in pathological medicine, as expressive of a state preliminary, or bordering upon the disease itself, would it not be well to designate as incipient scorbutus, those states or conditions of the body originating in the same circumstances, coeval with, and often becoming developed as the disease Scorbutus ? In the wide fields for observation, which Drs. Curran, Lonsdale, and Ritchie enjoyed, they noticed the prevalence of mild dysentery, diarrhœa, and irregular febrile states, before, as well as during the manifestations of Scurvy ; in the same manner as the "famine fever" of Ireland, and epidemics of that class in our own country, are ushered in by a series of phenomena, affecting considerable numbers of people, in which altered secretions and impaired nutrition occupy a prominent position.

Professor Christison's field of observation embraced the general prison at Perth, and the railway labourers and citizens of Edinburgh received into the Royal Infirmary. In Perth prison, Scurvy was more prevalent amongst the males than the females—contrary to what was observed in the Millbank Penitentiary in 1823; and those beyond adult age, or who had experienced long confinement, or were constitutionally infirm, were most liable to the disease. Let it be borne in mind, that the "separate system" of prison discipline is rigidly enforced in the institution. The diet was as follows. The breakfast and supper, taken conjointly, of the great majority of the male prisoners, who were on the third or highest rate, consisted of fourteen ounces of oatmeal, made into porridge, and nearly two ounces of treacle. Dinner, on four days of the week, consisted of twelve ounces of wheat bread, and two

[1] M. Fauvel observed at the Salpêtrière, that in the absence of teeth, there are no vegetations from the gums. His patients were advanced in life. In one case, where a single tooth remained, the gum was affected around it. On removing the tooth, the gum became on a level with the neighbouring parts, showing how much depends on pressure.

pints of barley broth, which contained one ounce of meat, four ounces of (decorticated) barley, about two ounces and a half of turnips, carrots, cabbage, leeks, and onions, together with a due proportion of salt. On one day of every week, each prisoner on the third rate had for dinner, in lieu of barley broth, two pints of pea soup, containing four ounces and a half of peas, one ounce of meat, and an ounce and a quarter of succulent fresh vegetables, duly seasoned with salt and pepper. On another day of every week, the dinner consisted of twelve ounces of bread, and two pints of barley milk, made with four ounces of barley, ten fluid ounces of skimmed milk, and a little salt; and another day it consisted of the same quantity of bread, and twelve ounces of white fish. It appears that the dietary of the prison admits of considerable variety, and that potatoes were occasionally substituted for oatmeal porridge at supper, but in 1846, owing to their scarcity and price, were given up. In March 1845, treacle was served to all the prisoners, except the infirm, instead of milk at supper; and in May of the same year, the same exchange was made at breakfast also. This change from milk to treacle involved, it seems, a daily loss of one ounce of nutritive proximate principle in the anhydrous state, and one ounce and a half of nitrogenous principle from the animal world. This loss, in the opinion of Dr. Christison, induced Scurvy. In further proof of this view of the case, he affirms that the restoration of milk arrested the progress of the disease, and that no antiscorbutic remedy was required. Skimmed milk, morning and evening, instead of treacle, and in severe cases, half a pound of meat at dinner, four times a week, or daily, produced an unequivocal effect. This we can readily understand: the diet of the prisoners, previous to the outbreak of the disease, was decidedly poor; added to which, there was a lack of fresh vegetables, quite sufficient to develop Scurvy. And the experience of all writers, from Rousseus down to our time, has shown that an improved and more varied diet always arrested the disease. The novelty[1] of Dr. Christison's views consists in his attributing antiscorbutic powers to milk; and the mode in which he has introduced his milk theory is calculated, at first sight, to make converts. A close examination, however, of his valuable memoir will detect deficiencies in the chain of evidence adduced. Thus, in the same prison, treacle had been substituted for milk on a previous occasion, for two years, at one meal in the day, without any appreciable effect, which could scarcely have been the case if milk be so essential. And it is somewhat strange, that it required fourteen months of this treacle-water system to develop the first indications of Scurvy—an objection which is thus explained by Dr. Christison.

"The food was not defective in quantity a long time, and the aid of concurring circumstances was necessary to develop the disease. It is very possible that the prisoners might never have suffered, had not some other cause cooperated, besides confinement and peculiarity of food. What this concurring cause may have been, it is not so easy to say. . . . . But the question may be left here, as there are no data for proceeding further with it."

With the greatest deference to Dr. Christison, we are inclined to attach considerable importance to his data, as furnished in the following passage.

"In ordinary years, potatoes were occasionally substituted for oatmeal porridge; but in 1846 these were necessarily given up, as they were scarce and dear."

We should have liked to know the exact date of the omission of the potatoes. It is, however, a sufficiently significant fact, that *the year* 1846 *marked the withdrawal of potatoes from the diet of the prisoners, and for the first time in the history of the institution, the advent of Scurvy!*

Following the series of articles (of which Dr. Christison's is the first), in the *Edinburgh Monthly Journal*, we now advert to Dr. Ritchie's experience in

[1] We consider it a novelty in the present day, though well aware of Hoffman's panegyric on the virtues of asses' milk in scurvy.

the Glasgow Infirmary. Before scurvy made its appearance, Dr. Ritchie observed that debility characterized generally all diseases. Sthenic inflammations were rare, whilst much diarrhœa, dysentery, and fever, prevailed. Convalescence was tardy, and nourishing food was greatly in demand in the treatment of disease. The food of those who presented themselves as scorbutic had consisted mainly of bread, coffee and tea, porridge or brose of oaten or pease meal, barley, and occasionally ham and salt meat, and "several had had oatmeal porridge with milk morning and evening, and sometimes salt meat and bread daily to dinner." He remarks "the general fact in regard to the food of all was, *that it failed in variety, and in the quantity of its animal constituents;* and that, in all but a fraction of the cases, in which they were very deficient, *the patients had been exposed for months to a total deprivation of fresh succulent vegetables.*

Dr. Ritchie is very minute in his description of the disease, and this minuteness of detail has led him into the serious error of classifying a variety of cachectic conditions under the head scorbutus; thus we find anæmia, emaciation, diarrhœa, dropsy, hæmorrhage, &c., adduced in various groupings as constituting varieties of the disease. He believes that "the errors in diet, and the want, in particular, of proper vegetable food, were the true exciting causes; and that cold and other debilitating agents operated often as the predisposing causes of the disease." Passing over the treatment of three of his groups,—namely, the anæmic, hæmorrhagic, and rheumatic, to which suitable remedies were applied, we find the true scorbutic cases allowed 8 oz. of oatmeal made into porridge, with 14 oz. of unskimmed milk, night and morning; and for dinner, 12 oz. of animal broth, made with vegetables, 4 oz. of fresh meat, and 2 oz. of turnips or carrots. Besides these edibles, an orange and a pint of porter daily, and either two scruples of crystallized citric acid, or two ounces of lemon-juice, and half a drachm of nitre, every eight hours. Fomentations were used to the affected parts, and shampooing for half an hour twice daily in hot water, or with camphorated oil. Leeches were occasionally applied to relieve pain. Under this orthodox plan of treatment, some recovered in two weeks, more in three, and all within the month. Though not attaching much importance to fomentations and shampooing, we feel it but due to Dr. Ritchie to say, that after fifteen or twenty days' trial of the diet and remedies which, with *few* exceptions, proved successful in our hands, we have occasionally observed the stiffness of the joints much lessened by shampooing with anodyne or camphorated liniment.

Dr. Lonsdale's experience included a wide field of observation;—the weavers, artisans, and railway excavators, under his charge at the Cumberland Infirmary—the agricultural cotters and others on "the Borders"—and the men employed on the Caledonian and Nithsdale lines of railway. The disease manifested itself at Carlisle in April 1847, and about the same period amongst the *navvies* along the railway. Amongst the agricultural population in the Gretna district, who had a fair share of milk, Scurvy appeared much sooner. Dr. L. describes hæmorrhage from the gums as common, epistaxis as less frequent, bleeding from the intestinal canal as occasional, and hæmaturia as having been met with in a single case. There was a great tendency to menorrhagia, even where the scorbutic symptoms were not so apparent. In a number of instances the breathing was much embarrassed. The artisans, their wives and families, lived in poor dwellings, and complained of the severe winter, want of clothing, and short allowance of food. Bread, oatmeal, treacle in very small quantities, tea and coffee, with an occasional herring, formed their entire sustenance:—"in short, their food was deficient in quantity, miserably so in variety, and altogether incompatible with the maintenance of vigorous health and strength." *None had tasted potatoes since the harvest of* 1846. The excavators, or "navvies," lived on beef and mutton, salt bacon, suet puddings, bread and butter, oatmeal porridge and treacle, tea and coffee, and occasional potations of ale, and, we may infer

from the locality, whisky. They used large quantities of animal food—a pound of beef at a meal, and breakfast and dinner were much alike. They had *no potatoes for seven or nine months, and no fresh vegetables.* They had not been in the habit of using milk even when favorably placed for obtaining it. The agricultural cotters, on the other hand, had a fair or even large proportion of milk, from 10 to 32 ounces daily.

The whole of the evidence collected by Dr. Lonsdale shews most distinctly, that Scurvy arose from the absence of potatoes and fresh vegetables.

His infirmary cases, which were very severely held, had a pint of beef-tea, a pint of porter, 12 oz. of bread and the same quantity of milk, *per diem*; also 3i or 3ij of citric acid and lemon-juice, with 4 oz. of infusion of gentian and water, as an acid drink. They soaked the bread in the beef-tea, and relished the acid drink amazingly. The worst cases had two oranges daily. The majority under this treatment recovered in fourteen days; there was, however, a difference in the speed of the recovery between the weaver and the excavator—the former, owing to his previous starvation, requiring three or more weeks. The great efficacy of oranges in Dr. L.'s hands fully confirms the high encomiums passed upon them by some of the writers of the last century. Dr. Lonsdale's conclusions are:—1. That as the vegetable world became more or less blighted, man in common with the higher class of animals suffered from causes not well understood, but apparently of an epidemic nature, which have deteriorated his condition, and made him the more ready victim to scurvy, fever, etc. 2. That Scurvy originates from an error of diet—the occupations, dwellings, etc., having little or no influence. 3. That a deficiency of potatoes constitutes the chief error of diet, whilst the absence of variety and deficient quantity of food hastened the development of scurvy. 4. That the use of milk lessened the liability to scurvy, but did not prevent its occurrence.

Dr. Shapter of Exeter had observed similar cases of ailment to those witnessed by Drs. Ritchie, Lonsdale, and others, previous to the outbreak of Scurvy in his neighbourhood. Amongst the earliest symptoms of the disease, he found the gums unusually pale and contracted; afterwards, they became red and swollen. He seems to have noticed pain in the loins more frequently than other writers. Fresh vegetables could not be had by the parties who suffered from Scurvy; whilst there was no deficiency of bread and meat. The absence of potatoes is allowed by Dr. S. to be the cause of scurvy; but as he views the disease as one of "depraved nutrition," he does not think the deficiency of vegetable food the sole cause,—cold, and other circumstances, being viewed by him as concurrent.

In Nottingham, Mr. Stiff noticed the disease among the poorer classes, who had suffered severely from deficient provisions, and where they had not made use of succulent vegetables. He traces the disease more particularly to the loss of the potatoe. In the Union of which Mr. S. is surgeon, potatoes were abandoned at Christmas, and Swedish turnips were used till March: then Indian meal and rice took their place; and, though the parties had milk-porridge daily for breakfast, and a fair allowance of meat and bread and soups, the disease appeared in six weeks after the abandonment of the fresh vegetables. Children at the breasts of scorbutic mothers were not affected; neither were any under five years of age liable to the disease. The old and edentulous subjects did not suffer in the gums, which confirms Fauvel's experience at the Salpêtrière. Mr. Stiff's treatment consisted in the substitution of cabbages for Indian meal, and the use of rhubarb puddings, lettuce, etc.; with imperial as a beverage, and citric acid as a medicine.

Dr. Laycock of York speaks of Scurvy as occurring in that city in those of the poorest class, who had little more than bread and tea, and no vegetables. His views of the distinction between Purpura and Scorbutus are by no means so clear as we could have wished; but in the treatment of Scurvy, and the recommendatory measures for preventing the disease, Dr. L. displays

much good sense. He attributes the disease to the want of fresh vegetables, especially the potatoe.

Dr. Bellingham has given a very clear narration of six of his cases—the symptoms of which fully coincide with those given in a preceding page. In reference to the etiology of the disease, he remarks, that none of his patients suffered from an absolute deficiency of food, but all agreed in not having used fresh vegetables from the period of the failure of the potatoe crop the year previously. He therefore attributes the appearance of the disease to the absence of the potatoe; and whilst it is clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develope Scurvy, it is shewn from long experience in Ireland, that a diet consisting solely of the potatoe is capable of affording sufficient nourishment, and of preserving the body in perfect health.

Dr. Curran of Dublin (whose death we so much deplore), entered more into the literature of Scurvy than any of his cotemporaries. His paper is well worthy of perusal. In his analysis of the symptoms, the following is deserving of notice:—"Ecchymoses appearing suddenly, preceded by pain, and the discoloured portions of the integument of a higher temperature than the healthy parts; epistaxis occurred in at least half of the cases; whilst hæmorrhage from the lungs and stomach was never seen; the joints were enlarged and fluctuating in some cases."

After refuting the various opinions as to salt, sea-air, etc., as causes of Scurvy, Dr. Curran notices Dr. Christison's views as to milk, and shows partly from the literature of the subject, and partly from his experience in Ireland, that milk is quite inefficacious as a remedy. Thus the patients in the North and South Union Hospitals of Dublin, for at least six months, had been using the following dietaries:—South Union, seven ounces of oatmeal in porridge, with half a pint of milk, for breakfast; eight ounces of bread, with half a pint of milk, for dinner;—under this regimen four cases occurred. The other seven attacked in the house had been on the diet of the infirm, including, *inter alia*, one pint and a half of milk daily. In the North Union the dietary was nearly the same. In respect to the supply of proteinaceous nutriment being wanting, Dr. Curran adduces similar examples to those furnished by Dr. Lonsdale where there was great abundance of animal food, and particularly mentions the case of a shop-keeper's wife, in Camden-street, Dublin, who had been using for three months previously beef-tea and bread and butter for breakfast; roast meat, broth, and bread, for dinner; and coffee, with bread and butter, in the evening; together with Guinness's porter, and wine. This case was most severe. He further remarks, that thousands, nay, millions of peasants in the centre and west of Ireland, have lived for years exclusively on potatoes with salt, or some similar condiment, and enjoying the luxury of milk only at rare and distant intervals, or *not at all* (as was satisfactorily ascertained in very many instances); yet Scurvy was unknown in Ireland until within a very recent period. Drs. Stokes, O'Ferrall, and others, bear similar testimony. Dr. Curran concludes, that "*neither misery, nor the want of milk, flesh, fish, farinacea, nor any combination of these, can be regarded as the cause of Scurvy making its appearance.*" Dr. C. believes in an "epidemic constitution" giving a tendency to the development of the disease, but that other predisposing causes are necessary to its actual outbreak: amongst these he mentions "humidity, changes of temperature, inactivity, and moral depression." A more searching inquiry into the history of the disease, and a better acquaintance with the observation of some of his contemporaries, would have shown him that many of these circumstances had been proved to exert no influence, whilst the fact which he himself related, that *in no single instance did green vegetables or potatoes form a part of the regular diet*, is all-important.

Having noticed the English, Scottish, and Irish writers on this interesting

subject, we request a little attention to what has been recorded by our American brethren. Scurvy appeared on board the United States' ship, "Raritan," and other vessels, employed in the blockade of Mexico in the summer of 1846. The recital of Dr. Foltz, as to the style of ships, their accommodation and internal arrangements, and the characters of the disease, reminds us greatly of the history of our own navy, when holds, decks, and hatches, were so objectionable in a sanitary point of view. Let it be said in justification of brother Jonathan, that all his vessels were not so faulty, though his dietary arrangements were far from what they should have been. However differently the men were placed as to the period of commission, or time of service before joining in the Mexican blockade (and the accommodation varied, to a certain extent, in every ship), yet all suffered alike from Scurvy, simply because there was one peculiar condition common to all,—namely, the want of vegetables. Dr. Foltz condemns the merchant whaling ships of the United States for their want of cleanliness, and the short periods allowed for refitting; and on board these he has seen Scurvy in its worst form; but it *always occurred in vessels where their universal antiscorbutic, fresh potatoes, had been exhausted for some time.*

We confess our great surprise, that ships fitted out for active service, and warfare, should have wanted fresh provisions, or nearly so,—as, in three hundred days, fresh meat was only served out nineteen times !—and only had a very limited supply of citric and tartaric acids, and lime-juice. And this to occur in the middle of the nineteenth century, in the hands of our knowing trans-Atlantic brethren ! It is a fresh lesson to us from a quarter we did not expect; and we hope the Admiralty Lords at Somerset House will not lose sight of it. God forbid that our navies should again be called upon to obtain what are called "glorious victories." Let us rather hope that the good time is coming, when "nation shall not lift up sword against nation, neither shall they learn war any more." But in the present state of the world it is necessary to be always ready.

M. Fauvel's cases at the Salpêtrière need not detain us long, as they occurred in persons of very advanced years,—the youngest being 69, the eldest 80, years of age; and the author is silent on many points of interest. The peculiar colour of the skin, and the fact of edentulous subjects presenting little or no affection of the gums, have already claimed our attention. He found the saliva neutral, or alkaline, with the exception of one case, where it was acid. Much as we admire the talents, industry, and intelligence, of our French neighbours,—and gladly we award to them some of the highest honours in medicine,—we cannot help expressing our surprise and regret at the illogical and confused discussions which have recently taken place in the Académie de Médecine, on the subject of Scurvy. Nor can we award unqualified praise to the views on its etiology, promulgated by the distinguished writers in the *Dictionnaire de Médecine* and *Dictionnaire des Sciences Médicales.*

Having given a brief epitome of the labours of modern observers, citing only those points in their writings which betokened originality, or were deserving of interest in future inquiries, we ought now to proceed to a very difficult part of the inquiry,—namely, the relation of chemistry to the history of scurvy. Before doing so, however, it may be advisable to sum up the evidence already collected on the etiology of the disease, and then say a few wards on the treatment. The means at our disposal for correcting the tendency, or preventing the occurrence, of Scurvy, will come more suitably under review at the close.

The circumstances attendant upon the late outbreak of Scurvy, bear every resemblance to those recorded from time to time by medical historians of this disease. The fanatical followers of Louis IX in his crusades, nearly six hundred years ago, who *voluntarily* abstained from meats, have their analogues in our time in the *compulsory* adoption of an insufficient diet by our lowest

class. Parallel instances might be drawn from the very opposite circumstances of men living on animal diet in large rations; *e. g.* the Germans in Hungary in 1720, and the railway excavators on the Caledonian railway in 1847. A careful survey of what has occurred within the last two years will shew that many circumstances formerly alleged as causes of Scurvy could have had little or no part in developing the disease. We allude more particularly to salt provisions, cold, moisture, bad air, moral depression, inactive habits. In reference to salt provisions little comment is necessary, inasmuch as their use was very limited indeed among every class of scorbutics in the late outbreak. A salt herring now and then, or a piece of bacon, generally embraced the whole amount of salt provisions amongst the artisans and their families. Many had no meat of any kind, salt or fresh, whilst the railway excavators, on the other hand, ate nothing but fresh mutton or beef as animal food. And, in the last century, Kramer and Lind give striking illustrations of the fact that Scurvy arises independently of salt provisions. Cold, long continued, predisposes the body to disease, and is calculated, like other depressing agents which interfere with vigorous and healthy action, to make the poor and ill-nourished more susceptible of the inroads of Scurvy; beyond this, cold cannot be recognised amongst the causes. The appearance of the disease between April and June from Cumberland to Cornwall, and the fact of people in warm, comfortable dwellings, in the larger towns, being affected, sufficiently discountenances the idea of attaching more importance to cold in this than in any other disease. And moisture can only be viewed in the same light. None of our authorities allude to the existence of undue moisture in their respective localities.

Impure air will doubtless influence those who are daily exposed to it, but neither history nor experience will warrant our attributing even the incipient stages of the malady to its baneful effects. Indeed it would be contrary to all sound reasoning to suppose such a thing; the workmen on the heathery moors, the rural cotters who inhale the "incense-breathing morn", becoming victims to Scurvy in a large degree, set aside such an hypothesis.

The same class of scorbutics whose habits were of the most active and laborious kind, may be fairly cited as showing that whatever may betide the tardy voyager in his distressed circumstances, or the young man inhumanly forced to join our naval expeditions, or the long incarcerated prisoner of our gaols and asylums, neither moral depression nor indolent habits are essential to the development of Scurvy; they can only be viewed as accessory circumstances, which never *per se* originate the disease.

It must not be argued that we are insensible or indifferent to the influences of foul air, cold, &c., on the healthful manifestation of the economy, because we discard them as bearing but a subordinate part in the generation of scurvy. We are too fully impressed with the fact, derived from personal experience of the disease, that all debilitating influences render the body a more ready prey to morbid action, *e. g.*, fever, scurvy, etc.[1] Our minds, however, should not be led away by circumstances of an accidental character from the constant and essential antecedents of the disease.

What is the essential antecedent of Scurvy? In our preliminary remarks we gave a rapid sketch of the districts in which the late outbreak of Scurvy manifested itself, embracing every variety of climate in this island, and affecting every class of society. Now that we have epitomized the facts contained in the memoirs before us, we are led to perceive that however

[1] Thus, in 1823, in the Millbank Penitentiary, the effects of inactivity and confinement were strongly marked in the increased liability to the disease observing a constant ratio to the period of confinement. The same occurred in the Perth prison, as far as the data will allow us to judge. Were it called for, other instances might be cited. It is well known that typhus, and other forms of fever, are often combined with Scurvy, and that these febrile affections were increased as Scurvy became more prevalent.

differently scorbutic patients may have been situated as to locality, employment, and food, there was one condition common to all of them, rich or poor, —the being deprived for a longer or shorter period of fresh vegetables, and particularly the potatoe. Hence, we are justified in stating that a deficiency or absolute want of *fresh succulent vegetable* food is the invariable or essential antecedent of Scurvy. This is but a repetition of the views entertained by the best authorities in the last century; and fully bears out the correctness of Dr. Budd's opinion in his very able article in the *Library of Medicine*. We have made no exception in favour of the milk theory of Dr. Christison,—a theory by no means free from ambiguities which the author himself has not been able to clear up; besides, the absence of potatoes, and inadequate dietary, in the Perth prison, were sufficiently cogent reasons for the outbreak of Scurvy, without any appeal being made to the withdrawal of milk. The evidence adduced by Drs. Curran and Lonsdale has been considered by previous commentators to have decided this question.

Chemistry.—If one disease more than another can be considered as a "blood disease," it certainly is Scurvy; hence the repeated attempts that have been made since the science of chemistry was brought to bear upon pathological medicine, to unravel the true condition of scorbutic blood. Alchemy itself, when directed to a speciality, has seldom assumed more Protean doctrines than the opinions, based on the legitimate chemistry of the last and present century, which have been launched forth from time to time on the nature of the blood in Scurvy. From the times of Boerhaave, Hoffman, and Willis, who dealt in oils, sulphur, salines, and other tangible substances, as characterising scorbutic blood,—to those of Andral and Becquerel, living and well-credited authorities, who speak of their thousandth parts, or even fractional divisions of these, as modifying the agency of the vital fluid,— what a host of discordances do we meet with! The blood has been found thick and thin, coagulable and non-coagulable, oxygenated and carbonated, alkaline and neutral,—its colour red, black, or slightly *greenish*. But we must not comment further upon the chameleon character of scorbutic blood. It is not a little curious, that those who had most abundant opportunities of observing the ordinary conditions of the blood,—*e. g.*, Trotter, Lind, and Rouppe,—failed to mark, or at least to agree, as to the apparently simple fact of its coagulability. The general opinion (Rouppe was an exception), no doubt, was that the blood was more or less broken up or dissolved, or thin and deficient in fibrine: hence its tendency to escape from the vessels, and to constitute the various hæmorrhages. As often happens in medicine, hypotheses were advanced, subservient, of course, to an explanation of the prevailing symptoms; and men found a difficulty in recording circumstances which tended to militate against their preconceived views, or in any way to interfere with a beautifully developed theory. Let us briefly consider what has been done within our time.

Mr. Busk, about nine years ago, made three analyses of the blood of scorbutic patients, and found the quantity of fibrine above its natural standard.[1] Shortly afterwards, and in ignorance of Busk's labours, Andral found a deficiency of fibrine (1.6 in 1000 parts of blood); and on his two analyses he framed a very ingenious theory of hæmorrhages generally. Such is the influence of a name in blinding our judgment, that a theory having no greater basis than two observations, but bearing the stamp of Andral, was immediately accepted, and somewhat extolled for its beauty and its applications. Andral's countrymen exposed the incorrectness of his views; and he, philosopher-like, acknowledged his errors, and the danger of hasty generalization from so limited a number of observations. Chatin and Bouvier seem to

[1] Library of Medicine, vol. v, p. 90, art. Scurvy, by Dr. Budd.

have laboured earnestly on this division of the inquiry; and, whilst they freely admit the difficulty of estimating the exact proportion of fibrine, they are satisfied that there is considerable diminution in the force of its cohesion,—so marked, indeed, that they found it difficult to isolate it completely from the red globules. This is an important fact, and, if corroborated, will serve to explain many circumstances in the pathological history of Scurvy.

The specific gravity of the blood (defibrinised) is variously estimated, but generally found slightly below the average; the same may be said of the specific gravity of the serum. Busk, Fauvel, and Garrod, met with buffed and cupped blood As already stated, Busk found the fibrine increased, thus his three cases gave 6.5, 4.5, and 5.9 parts in the 1000—the blood of a healthy man subjected to the same analysis yielded 3.3 parts in the 1000. Chatin and Bouvier's analysis indicated 4 parts in the 1000 in the amount of fibrine or scorbutic blood, and Frick's single case made it 4.204. The only marked deviation from the general rule is Dr. Ritchie's case, where only 1.106 of fibrine in the 1000 was found by Dr. R. D. Thomson.

A great deal has been said about the red particles in this disease by the chemist and micrographer; of the latter class we may mention that Chatin and Bouvier observed no change in their form, whilst Ritchie considered the corpuscles irregular and flattened. The chemist generally reports the proportion of red particles to be diminished,—the numbers occasionally ranging within the limits of healthy blood. The lowest amount was a case of Andral's, only 44.4 per 1000—the highest (Frick's analysis) gave 117.078. Considering the important part which these bodies play in the animal economy, as shown by modern physiology, it is only reasonable to suppose that a more searching inquiry than has hitherto been made into their composition when freed from the fibrine, will lead to promising results.

We pass over the albumen of the blood as affording no indication. The same may be said of the salts, the chlorides, phosphates, and iron, about which chemists are by no means agreed.

The quantity of water was found augmented in all the analyses, thus confirming the views of the early writers.

We need hardly say how unsatisfactory is our knowledge of the characters or condition of the blood of scorbutic patients, and how much requires to be done before pathology can be safely aided by the light of chemistry, either in framing a theory of the disease, or in the advocacy of a plan of treatment. We know that many, like ourselves, felt disappointed at the *status quo* of our knowledge of scorbutic blood, after the subsidence of the disease in 1847, more particularly as large expectations had been formed from the advanced state of organic chemistry; and it is somewhat humiliating to have to admit in our day the justness of a conclusion which Trotter, of a bye-gone age, arrived at, namely, that "the proximate cause of Scurvy is still to be sought for from some peculiar state of the blood."

The rarity of Scurvy, and the small mortality of those affected, the difficulty attendant organic analyses, and the little leisure afforded to the great bulk of practising physicians for chemical enquiries, may be fairly pleaded in the way of atonement for the small advance we have made in the chemistry of the disease. But the same apology can hardly be obtained for the chemists *ex professo*, who adopting different modes of analysis, are hitherto undecided as to the exact character or composition of healthy blood itself. Without some healthy basis or standard for our guide, how are we to detect the constitutional deviations and particularly morbid changes to which the circulating fluid is liable. Let this first great step be accomplished, then we should hope that further inquiries into the chemical history of scorbutic blood would determine:—1. The relative proportion of the ingredients in the blood. 2. The chemical composition or properties of the ingredients which deviate from the normal standard; and 3. The physical condition of the

blood consequent upon the foregoing alterations in quantity or abnormal composition.

Having too great faith in the progressive philosophy of the age to suppose that Dutrochet and Matteucci have laboured in vain, we are free to anticipate that the physical condition of the blood will be more thoroughly examined—it being sufficiently obvious, from the fibrinous and sanguineous exudations in different regions of the body, that the balance between the circulating medium and the animal tissue is greatly modified in Scurvy. The diminished "plasticity" of the fibrine, and probable increase in the solubility of the albumen, as noted by Chatin and Bouvier, independent of other data, evince that the blood rather than the tissues is primarily affected.[1]

We have endeavoured to ascertain how far the physician has been aided by chemists, in framing a theory of the disease; let us now add a few words on the information they have brought to bear on the treatment and prevention of Scurvy.

Dr. Christison, in reasoning upon his observations at the Perth prison, thought it probable, that a saccharo-farinaceous and fatty diet could not be continued for a long time, however large the quantity of gluten in it, unless combined with articles containing animal casein or vegetable albumen; and to this latter principle, rather than the small proportion of salts with vegetable acids, he attributes the anti-scorbutic properties of succulent vegetables. The experience of Kramer, Trotter, etc., might be cited against these views of Christison; but his contemporaries, who were cognizant of meat and farinacea being abundantly supplied, satisfactorily prove their untenability, seeing that Scurvy has arisen when one or both were plentiful. And the fact of citric acid, without a drop of milk, curing the disease, is a sufficient answer to his theory of the anti-scorbutic qualities of fresh vegetables.

Drs. Aldridge and Garrod take a different ground. In scorbutic blood they see a deficiency of sulphur, phosphorus, and the alkalies which enter into the normal composition of blood, and formation of the organic tissues. Dr. Aldridge calculates, that men of twelve stone weight throw off 24 grains of sulphur, and about 100 grains of potash and soda per diem; and that wheaten flour and peas, in sufficient quantity to meet the waste of the proteine elements, are insufficient to meet the waste of sulphur and alkalies; in short, that the deficiency of mineral ingredients in flesh and seeds is the cause of Scurvy. He adds, that the herbaceous parts of vegetables which cannot supply nitrogen in sufficient quantity, contain the minerals in abundance, but the potato contains in bulk, not too considerable, both organic and inorganic principles—all the necessary elements for the supply of waste. Dr. Garrod takes potash alone under his patronage, and gives the analysis of bread, flour, potatoes, mutton, etc., determining the amount of potash in each, and applies this analysis to dietaries. Thus, in the Crediton workhouse, he found the weekly supply of potash, under the ordinary diet, to be 186 grains of potash for the men, and 181 grains for the women; but when rice took the place of potatoes, the amount of potash was 51 and 46 grains respectively. He states, that all substances classed as anti-scorbutics contain a large quantity of potash, and instances fruit, potatoes, milk, meat, pickles, etc.; that in Scurvy, the blood is deficient in potash, and that scorbutic patients recover when potash is added to their food, the other constituents remaining as before, both in quantity and quality, and without the use of succulent vegetables or milk. It would appear that potatoes contain a larger proportion of potash than any other antiscorbutic, and that when boiled (not too much, and unpeeled) the proportion of potash is greatest. His single analysis of scorbutic blood amounts to little, but his statement,

[1] Injections of the vascular system after death, in cases where sanguineous exudations had been manifested during life, show that there is no want of power in the smaller vessels, as no portion of the injection escaped from them.

that in several cases of Scurvy his treatment consisted in the daily administration of a few grains (12 to 20) of some salt of potash, mixed with syrup and water, and where vegetables, milk, and malt liquors were strictly prohibited, and the patients rapidly recovered, claims our earnest attention. The only salt of potash that has had much trial in the treatment of scurvy is the nitrate; and some few of our emigrant and convict ships testify to its value to a certain extent, but when compared with lemon-juice, or citric acid, the nitrate of potash, it would seem, from evidence lately adduced by our contemporary the *British and Foreign Medico-Chirurgical Review*, from the office of Sir W. Burnett, occupies but a secondary position. Dr. Garrod's theory is ingenious and well-sustained, excepting in the amount of practical evidence as to the utility of potash. This can only be decided satisfactorily by an appeal to extensive data, and by instituting a series of comparative experiments as to the salt of potash and the well-approved old fashioned remedies —lemon-juice, etc. If Dr. Garrod's view be correct, John Bull might, by by carrying with him a few ounces of potash in his visits to his antipodal friends, or in his pursuit of a North-west passage, bid defiance to Scurvy.

Dr. A. Anderson, of Glasgow, endeavoured to reconcile the differences of opinion prevailing amongst the Scottish writers. He states, that food appropriate to man must consist of three parts,—the nitrogenous, to nourish; the non-nitrogenous, to produce the extra heat required; and a third element, to aid in the assimilation of these. This element, he believes, is furnished by the various juices, more or less acid, in vegetables and fruit. He compares the efficacy of these juices, in Scurvy, to the effect of iron in anæmia. He asks, "Why is there sugar in milk?" and states that the lactine is converted into lactic acid; and that, in the infant, this stands in the place of vegetable food in the way of preventing Scurvy.

Treatment.—How instructive history is, when read aright; whether it pertain to men or manners, physic, or philosophy! In the present day it is apt to be thrown upon musty shelves, and forgotten; and we are busy coining what we term new facts, and bothering our brains about discoveries, which our forefathers had either fully understood, or fairly refuted, hundreds of years ago. Let us dust off the cobwebs of some of our old friends in their plain leather suits, and ask their advice on the treatment of Scurvy. Here is Rousseus, who wrote within an ace of three hundred years ago, telling us that sailors cured themselves by the use of oranges. Thank thee, Rousseus, for that great fact! Albertus wrote well thirty years later; and Sir R. Hawkins, in 1593, fully proved lemon-juice. Similar facts were elicited from time to time, but, alas for truth!—particularly a medical truth, when lay commissioners and Admiralty lords are to sit in judgment upon it. Two hundred years elapsed between Hawkins' experience of lemon-juice, and its introduction as part of the regular diet of our navy! Kramer's pithy view of the treatment may be quoted a thousand times. It is above praise. He says: "Scurvy is the most loathsome disease in nature, for there is no cure for it in your medicine chest,—no, nor in the best furnished apothecary's shop. Pharmacy gives no relief; surgery as little. Beware of bleeding; shun mercury as poison. You may rub the gums; you may grease the rigid tendons in the ham, to little purpose. But if you can get green vegetables; if you can prepare a sufficient quantity of fresh, noble, antiscorbutic juices; if you have oranges, lemons, or citrons; or their pulp and juice preserved with sugar, in casks, so that you can make lemonade, or rather give to the quantity of three or four ounces of their juice, in whey,—you will, without other assistance, cure this dreadful evil." It seems very uncalled for to add one word to this graphic advice; but as palliatives of the mind are necessary along with local soothings, it is well occasionally to wash the gums with the tincture of myrrh, or bark, or rhatany, or solutions of chlorides of lime and soda, and to use warm fomentations, or anodyne lini-

ments, to the stiff, painful joints. Nor must it be overlooked, that, in some cases, they seem serviceable. The patient with embarrassed breathing requires a stimulus of some kind (and generous port wine is the best), before he ventures to rise. We have experienced, with Dr. Budd, the bitterness of neglecting Lind's advice on this subject. Many die of syncope in this state. Ulcers are washed with lotions of citric acid or lime juice.

Our authors, as already seen, improved the diet of their patients, varying its character as much as possible, and making it nutritious in addition to their exactions from the materia medica. Milk, beef-tea, and other soups, are required till the gums permit of more solid food. The respective merits of citric acid and nitrate of potash, have been much canvassed; and though opinion is justly in favour of the citric acid, we hope the surgeons of our emigrant ships, etc., are collecting information by which this question may be decided to the satisfaction of all parties.

Prophylactic Measures.—What might be said regarding the prevention of the disease, has been greatly anticipated in the discussion of the treatment. Prevention consists in a due supply of fresh succulent vegetables. Notwithstanding the potato-commission for Ireland, a knowledge of the class of plants that could be easily cultivated, kept through winter, and sold at a reasonable price to the poor, is still a desideratum. In the absence of the potato,[1] some of the cruciferæ seem the most adapted, as many members of this family might be cultivated in early spring, in certain counties; and we hope that, ere long, we shall be able to do otherwise than trust entirely to the potato.[2] Had we possessed such knowledge (as is still required), in the autumn of 1846, the pages of Irish history would not have been darkened by the records of such sacrifices as the noble-minded and illustrious Curran and his numerous associates,—men who, without money, and without price, exposed themselves day and night, in the hovels of the sick and dying, to dangers, which no murderous battle-field could rival. Noble sons of humanity! your rewards were not of this world. No pageantry and pomp attended your funeral rites; no state pensions, no state honours, await your widows and orphans. But written in Heaven, on the great scroll of love and charity, in all lustre and glory, your names stand imperishable and immortal!

SURGERY.

EXCISION OF THE HEAD OF THE FEMUR.—OPINIONS OF MESSRS. SYME, FERGUSSON, AND H. SMITH.

A difference of opinion exists between Mr. Syme of Edinburgh, and Mr. Fergusson of London, as to this operation. Four years since, Mr. Fergusson

[1] The potato has had its share of abuse from chemists. The Liebig school saw little besides carbon and water in the potato, and that it could not make bone or muscle, whilst peas and beans did so admirably; and so it became a theory, that an ounce of beans or peas in point of nutrition, exceeded in point of value a pound of potatoes, and that these latter, should be discarded as unwholesome. The learned professor of Utrecht (Med. Gazette, Sep. 1848) also issued his manifesto against the "Irishman's friend"—declaring the potato to be the cause of the moral and physical degeneration of the nation which made use of it. He apparently had heard of Ireland, and qualified his views by admitting that life might be sustained by the potato, but it was "not an elastic or healthy life." Now we have no hesitation in backing an Irishman's elasticity against that of any Saxon or Dutchman.

[2] One or more of the following list might be had almost throughout the whole winter—some of them for the gathering. Cabbages, turnips, or their tops, sorrel, water-cresses, horse-raddish, rhubarb, nettles, fir-tops. All classes should be encouraged to make use of fruits in their season, *e. g.* apples, etc., which, in some districts, are cheap, and can be had in fair abundance till Christmas.

revived the operation, which had been performed with success, about thirty years previously, by Mr. Anthony White. Mr. Fergusson's case was entirely successful; and, in consequence of this, he has recommended the operation for certain cases. He and other surgeons have since resorted to the operation with more or less satisfactory results. Mr. Syme, however (perhaps from an imperfect knowledge of the facts), has entered a strong protest against the proceeding; and argues that it should never be put in force. He says, in a clinical lecture reported in the *Medical Times* for December 30, 1848: "If caries supervene, no human means can remove the disease. Lately, in some of the London hospitals, it has been attempted to cure the disease by removing the carious head of the femur; but this is improper, as caries of the joint never exists without the bones of the pelvis being equally involved. I regret that these operations should have been attempted, as they tend to throw discredit on the excision of other joints,—such as the elbow, where the practice is eminently useful, and which has now become an established operation in surgery. If the disease admits of recovery, excision of the head of the thigh-bone is superfluous and useless. If it does not admit of recovery, cutting out the head of the thigh-bone can only hasten the fatal termination. If the patient recovers after the head of the bone has been cut out, it is a distinct evidence of the uselessness of having excised it. If caries is curable, why amputate the head of the bone? If incurable, why remove the head of the bone, and, at the same time, leave behind carious portions in the acetabulum, which cannot be removed? Common sense, and their unsuccesstul results, will, no doubt, ultimately show the impropriety of such operations."

These remarks of Mr. Syme are commented upon by Mr. Henry Smith, in the *Lancet* for January 6, 1849. This gentleman was formerly house-surgeon to King's College Hospital, and has had the opportunity of witnessing and assisting in the operations of excision of the head of the femur, performed by Mr. Fergusson. He has specially studied this subject, and is the author of an essay on the operation. He considers that Mr. Syme's main objection to the proceeding does not hold good; that his assertion that "caries of the joint *never* exists without the bones of the pelvis being equally involved," is neither in accordance with facts ascertained by the pathologist, nor by post-mortem specimens of the disease; and that it is rendered invalid by the results of the operation itself, which has proved successful both in this country and abroad.

The circumstance of disease implicating the pelvis, in a great number of instances, is a serious objection to the operation; but yet the existence of a moderate amount of disease in the acetabulum should not, Mr. Smith alleges, prove a bar to the performance of the operation, where there is no other contra-indication, as it may be got at and removed by proper instruments, "in the same manner as carious portions of the scapula may be removed in the operation of excision of the head of the humerus."

With respect to Mr. Syme's other objections, Mr. Smith states, that it is not in those cases which admit of cure, that the surgeon would perform the operation; but, that it is in cases where the affection has gone so far, that there is no hope of saving the patient by any other means, and there is good reason to suppose that the head of the bone is alone, or chiefly, diseased, the surgeon is justified in resorting to it.

In the *Lancet* of January 21, are reported some clinical remarks, delivered after an operation, performed on the 13th January 1849, by Professor Fergusson. His views, as there expressed, are similar to those of Mr. Smith, and entirely opposed to those of Mr. Syme. He strongly recommends excision of the head of the femur in certain instances; and says that the disease involving the acetabulum, to a certain extent, is not an absolute objection to the operation, as this diseased portion may be removed. He points out that, in some instances, when the cotyloid cavity has been origi-

nally attacked, the disease stops, and a deposit of new bone takes place, filling up the cavity; as was found to be the case in the patient he had just operated on: whilst, if the head of the thigh-bone be extensively carious, there is little probability of its separating; therefore the surgeon is called upon to do the operation.

Thus it appears that two of our most eminent surgeons promulgate opposite opinions respecting a most important point of practice. Mr. Syme, we think, is premature in his summary condemnation of the operation. It is true that there are great difficulties connected with the selection of cases; but it is equally true, from the results obtained by Mr. Fergusson and others, that it may, in certain instances of hip-disease, be undertaken with great propriety; that life may be saved, and a limb, more or less useful, preserved.

COLLODION: ITS USES IN SURGERY.

The Employment of Collodion in Surgery promises to be not the least important of the recent improvements in the practice of the healing art. Referring our readers to p. 206 for an account of the history, mode of preparation, and properties, of this substance, we here give a summary of what has been written regarding its various applications in Surgery.

1. In wounds, ulcers, and other external lesions, it has been employed with great success. In the *American Journal of the Medical Sciences* for April 1848, its discoverer, Mr. Maynard, of Boston, states that Dr. Whitney had employed it in the *removal of a wen from the head.* To obviate the occurrence of erysipelas, from the presence of sutures, Dr. Whitney shaved the hair from the scalp, and, by means of the cotton solution, glued some pieces of sheep-skin on each flap, at a short distance from the wound. These straps were then brought together, and retained in their position by sutures. The wound healed favourably; and pain, and the usual accidents arising from the presence and removal of sutures, were entirely obviated. Mr. Maynard also mentions that Dr. Comstock, of Wrentham, U.S., "has recently employed this liquid as a dressing, in a case of *extensive laceration of the perinæum*, with a success that, he thinks, never attended any other mode of management. The dressings remained firmly attached, and solid, during the process of healing, notwithstanding they were for a time almost constantly covered by urine and mucus, and subject to being displaced by the motions of the patient." *The Monthly Journal of Medical Science* for July 1848, contains a report of a paper "On Solutions of Gun-cotton, Guttapercha, and Caoutchouc, as Dressing for Wounds," read by Dr. Simpson before the Medico-Chirurgical Society of Edinburgh. He had employed Collodion, with perfect success, in some cases of *painful fissure at the base of the nipple.* Having brought together the edges of the wounds, he applied the Collodion, which formed a protection against all irritating influences, and permitted the child to suck, without causing, as it previously did, pain to the mother, or disturbing the dressing. The healing process took place rapidly. Mr. Erasmus Wilson (*Lancet*, Nov. 18, 1848, p. 553), says, that in two instances of *chapped nipples*, in which he used it, it seemed to "work a charm upon the painful skin. The gaping cracks were instantly drawn together, and almost obliterated, by the contracting power of the remedy; and were effectually shielded from the influence of moisture, and the pressure of the gums of the infant, in consequence of the rapid evaporation of the ether in an instant of time." Dr. Simpson also mentions, in the above-cited communication, that, in a case where Professor Miller had *removed a portion of necrosed bone* from the lower jaw, he (Dr. S.) dressed the wound with Collodion, with the effect of retaining its edges in apposition. Mr. Brown made a communication to the Westminster Medical Society, Dec. 3, 1848, stating that he had used Collodion, with advantage, in cases of sore nipple. (*Lancet*, Dec. 23, 1848.) The *British-American Journal*, for August 1848,

states that Dr. Payne, dentist, of Montreal, appears to have suggested the use of the Collodion in *burns*; and Dr. Crawford, of the same city, employed it in the case of a young gentleman who met with a severe burn of the face and hands. The burn was covered with a thin glazing, which completely excluded the air; and the pain almost immediately subsided. Its utility in burns has been confirmed by other practitioners. In the *Dublin Medical Press* for October 4, 1848, Dr. T. R. Mitchell gives the result of his experience of the use of Collodion in *Ulceration of the Os and Cervix Uteri*. He considers it greatly superior to nitrate of silver for forming an artificial covering to the ulcer, and permitting the healing process to go on underneath. The ulcerated surface being wiped clean and dry with soft lint, the solution is rapidly applied, with a camel's-hair pencil, and allowed to dry; a second, third, and fourth, coating, if necessary, can then be applied. The first application is attended with a slight burning sensation, caused by the ether, followed by a sensation of coldness, from its evaporation. The application requires to be renewed at the end of forty-eight hours, as the mucus collects beneath the dressing, and raises it. In cases of simple abrasion, three dressings have proved sufficient; in more obstinate cases, he has employed caustics first, and then covered the eschar with Collodion; thus curing extensive ulcers in half the time required by other methods. He has also found it beneficial in cases of *vaginitis* without ulceration. In the *Annales de Thérapeutique* for September and October 1848, p. 241, it is stated, that M. Jobert, of the Hôpital St. Louis, and M. Robert, of the Hôpital Beaujon, have successfully employed it as a *dressing for wounds made in operations*. Dr. Yvonneau, junr., of Blois, communicated to the *Union Médicale* for November 18, 1848, the particulars of a case in which he had employed Collodion, with an amount of success exceeding his expectations. The patient, a child of five years old, had *extensive fistulous ulceration of the right cheek*, permitting the escape of saliva, as well as of food and drink; the cheek had also contracted very firm adhesions with the gums of both jaws. After an ineffectual attempt to remedy the mischief, by a common mode of operation and dressing, he determined, as a last resource, to try the effect of Collodion. Having obtained anæsthesia by means of chloroform, he carefully brought together the edges of the wound, and retained them in their position by long and firmly agglutinated bandages, passing completely over the chin, upper lip, and *ala nasi*. Over the whole, he applied a layer of Collodion; which, besides its adhesive property, completely protected the dressings from the saliva and food, which had been the main causes of the failure of the former operation. At the end of three days, a slight displacement of the dressings rendered readjustment necessary, when the edges of the wound were found united to a considerable extent. On the eighth day, the dressings were again removed; when, in place of the enormous fistulous opening, only a small cicatrix was found, which at length almost disappeared. The Collodion, in this case, appears to have been of service, not only in preventing the dressings from imbibing fluid from without, but also by preventing the escape of saliva, externally, through the wound. The healing process does not seem to have been retarded by its presence in the interior. M. Yvonneau is of opinion that Collodion might be advantageously used in the operation for *hare-lip*. He also states that he employed it in a case of *wound of the first joint of the thumb*, with disease of the ends of the bones, produced by the bite of an ass. Having performed resection of the diseased ends of the bones, he retained the thumb in an immoveable position, by means of linen bandages soaked in Collodion. The result, however, he was unable to state, as the patient was still under treatment at the time of his making the communication. In the *Lancet* for December 9, 1848, we find that Mr. Tucker, of Berners-street, had been successful in restraining severe *hæmorrhage from leech-bites* by means of compresses of lint dipped in Collodion, and applied to the bleeding orifices. Where oozing appeared, the solution was applied by

means of a camel-hair pencil; it was also applied freely round the edges. In the same journal, for January 6, 1849, Mr. R. T. Wylde recommends it in the hæmorrhage from leech-bites. Dr. W. H. Ranking, of Norwich (*Lancet*, January 13, 1849), says that he has caused it to be applied, with much advantage, to the *incisions after cupping*. Dr. Muirhead, of Glasgow, (*Lancet*, January 27,) says that he has seen great benefit arise from its use in *bed-sores*.

2. Cutaneous Diseases.—Mr. Erasmus Wilson has employed Collodion with great benefit in these affections. In the *Lancet* of November 18, 1848, he describes the case of a young lady, who "had been suffering for many years with *scrofulous ulceration of the skin*, in various parts of the body. She had been under my care", he says, "for several months, and the sores were much improved; but they were nevertheless very far from being healed. The diseased skin had the appearance of being worm-eaten, its hollows were filled with pus, which burrowed under the surface, and it was moreover thickened and congested. By the constitutional treatment which I had pursued, I had, to a great measure, corrected the pyogenic tendency of her system; but I felt the want of a local remedy that would serve as an impermeable covering to the surface—in fact, take the place of the lost epidermis, and act the part of an artificial scarf-skin. I had tried vulcanized caoutchouc spread with adhesive plaster, gutta percha, nitrate of silver, astringent solutions, ointments, and pressure by bandages, in vain—the remedy was not as yet found." Having received some Collodion from Messrs. Bell of Oxford-street, he determined on applying it, and "on the next visit of the patient, removed the dressings from the sores, and pencilled them over with the new agent, which covered the surface with a powerfully adhesive film, of about the thickness of gold-beaters' skin, and effectually represented the lost scarf-skin. A piece of dry, soft linen was the only additional covering required; and she left me, much delighted at the abandonment of the local applications and bandages. This young lady has since continued to apply the Collodion herself, night and morning, until the present time, when the sores are nearly well, and the congestion and scrofulous thickening of the skin almost gone." Mr. Wilson says further, "The diseases of the skin in which I have hitherto used the Collodion with advantage are, *chronic erythema of the face; intertrigo; chapped nipples*, and *chapped hands; herpes labialis, preputialis*, and *zoster; lichen agrius; lupus non exedens* and *exedens; acne vulgaris;* and several *affections of the sebiparous organs*. In chronic erythema of the face, its contracting power was most usefully evinced, as it was also in lupus non exedens and acne. In a troublesome case of chapped hands and fingers, resulting from chronic lichen agrius, the Collodion acted, not merely as a protective covering, but also promoted the healing of the cracks more quickly than the remedies I have been in the habit of employing. In four instances, it immediately put a stop to herpes labialis, and in a very severe attack, it showed itself to be a powerful and useful remedy. Small superficial ulcerations of the corona glandis and prepuce, caused by excoriation, were cured by a single application; and in a gentleman very susceptible of excoriation, it acted as a prophylactic. From the success of the latter trial, I am induced to think that it might be usefully employed as a prophylactic, in cases of exposure to syphilitic contagion." In his paper in the *Lancet*, already quoted, Dr. W. H. Ranking says: "I have not had an opportunity of trying this preparation in *variola*, but I would suggest it as a valuable application to the face, etc., for the purpose of excluding air, and thus preventing pitting. The same effect is produced by tincture of iodine, a solution of nitrate of silver, Vigo's plaster, mercurial ointment, etc., but it strikes me that Collodion offers a peculiarly ready mode of obviating deformity. I need not refer to the fact, that the development and maturation of the variolous corpuscle is in some way connected with the contact of air, as it is always more decidedly and abundantly formed on the face, hands, etc., and is more sparingly de-

veloped on the hairy scalp of the adult, while on the scalp of early infancy it makes the same progress as on the face.

3. As a Stopping for Teeth.—In the *Lancet* for 30th December, 1848, p. 729, Mr. J. Robinson, dentist, Gower-street, states, that he has "frequently applied Collodion in severe cases of *tooth-ache*, arising from exposure of the nerve, with perfect success, when no persuasion could induce the patient to submit to extraction." The method which he adopts is, to let the patient first wash the mouth with warm water, in which a few grains of bicarbonate of soda have been dissolved. He then removes from the cavity any foreign substance likely to cause irritation. After drying the cavity, he drops from a point the Collodion, to which have been added a few grains of morphia, after which he fills the cavity with asbestos, and saturates with Collodion. Lastly, over this, he places a pledget of bibulous paper. In a few seconds, the whole becomes solidified, and forms an excellent non-conductor of heat and cold to the exposed nerve. By occasionally renewing this, he has been enabled to effect a more durable stopping with gold leaf.

AMPUTATION OF ULCERATING STUMPS, BY MR. SYME.

——, aged 18, an engineer, two years and a half ago, had primary amputation performed about the middle of his left leg, by the flap operation. The stump never healed properly; and, when brought to the hospital, the covering for the bones was found insufficient, ulceration having taken place. It was very painful, and the extremities of the tibia and fibula felt as if enlarged. On the 10th January (in Edinburgh Royal Infirmary), amputation was performed, by bringing the parts into nearly the same state as they would have been, had the original amputation been made by a circular incision, about two inches and a half higher up the leg. Sutures were introduced, but not tied, in order to prevent the necessity of undoing the stump, as in these cases of secondary amputation, the risk of the oozing of blood from innumerable small vessels is found to be very great. In this case, the propriety of this practice was proved, as in the evening a large clot of blood had formed in the wound, which, being removed, the parts were finally brought together, and will, no doubt heal perfectly; as has been the case with the two stumps operated upon by Mr. Syme on the 22nd December, which now are both quite well.—[From *Medical Times*, 20th January, 1849.]

CONTRACTION CAUSED BY CICATRICES SUCCESSFULLY TREATED BY EXCISION OF THE TELA INODULARIS.

Although surgeons are well acquainted with signal cures of the great deformities resulting from contraction of the cicatrices of burns, etc., which are from time to time effected by the ablation of the accidental or inodular tissue,[1] yet the two following cases seem worthy of transference to our pages. The long continuance of pain, after the operation, appears to be one of the greatest obstacles in the way of its performance. The following cases occurred in the practice of M. Paul Guersant, in the Hôpital des Enfans Malades of Paris, and are reported in the *Journal de Médecine et de Chirurgie*, Jan. 1849, p. 25.

Case 1.—A lad, aged 14, was, when one year old, burned in the anterior and inferior part of the fore-arm. The result was rigid flexion of the hand, at a right angle with the fore-arm. The accidental tissue causing this deformity had been divided transversely, at Brussels, three years ago: but M. Guersant resolved to cut out the entire cicatrix; and this operation he

[1] To this tissue, Delpech of Montpellier gives the name of "tela inodularis", or "tissu inodulaire."

performed on the 3rd August 1848. The movements of the fingers were free, and the band of cicatrix was immoveable. This band was one *décimètre* (about four inches) long, and two *centimètres* (about $\frac{3}{4}$ of an inch) in breadth, and both the radial and ulnar arteries were external to it. The patient having been subjected to the influence of chloroform, an interosseous knife (*couteau interosseux*) was thrust under the cicatrix, and carried upwards and downwards, so as to remove a piece measuring at least twelve *centimètres* (about five inches). The edges of the wound were pared transversely, and some partial bands of cicatrix dissected out. There was no hæmorrhage. The wound was dressed with compresses saturated in cold water. An oat-chaff pillow was laid on the dorsal aspect of the hand and fore-arm, and on this pillow was placed a splint: the fore-arm and hand were then bound down to this. For the first three days, he suffered intense pain, notwithstanding the continued irrigation with cold water which had been kept up. On the 10th, the hand was quite straight, and the result of the operation in all respects seemed satisfactory. On the fourteenth day, the acuteness of the pain having abated, the irrigation began to be gradually discontinued; and as the wound looked a little grey, and suppurated profusely, the cold water was replaced by lemon juice and an aqueous solution of chlorine. On the 15th, 16th, and 17th, the same treatment was continued. The granulations increased: there was no inflammation of the sheath of the tendons, although the operation had left to the tendons only a very scanty covering of cellular tissue. On the 30th, as the granulations looked grey, they were touched with nitrate of silver. On the 14th September, matters are reported as going on favourably. On the 5th October, strips of diachylon were applied: and on the 19th, the wound was not more than one centimètre broad, and six centimètres (about $2\frac{1}{4}$ inches) long. On the 20th November, he left the hospital, with the wound nearly closed, and the hand in its right position. To prevent a fresh contraction, extension was recommended to be continued for some time; and to obviate the risk of a stiff joint from prolonged extension, he was advised at intervals to move the joint.

Case II.—A girl, aged four years, as the result of a burn or wound of the hand, had severe flexion of the middle finger of the left hand. Conceiving that there was no anchylosis, M. Guersant removed three centimètres (rather more than an inch) of the cicatrix, going down almost to the sheath of the flexor. The finger was then straitened, and kept in place, by means of a small splint applied to its posterior aspect, and appropriate bandages extending over all the fingers and carpus, and leaving only the thumb unconfined, and the wound free. Irrigation was also practised in this case. On the 17th of August,—that is, seven days after the operation,—there was no fever. Three days after the operation, the cold-water irrigation began to be gradually discontinued, and simple dressings used in place of it. The appearance of some pus, apparently coming from the sheath of the tendons, caused the use of poultices, and fomentations with marsh-mallow. On the 20th, the inflammation had disappeared. From this date, cicatrization went on rapidly; and the child left the hospital without any trace of the operation, except a stiffness of the joint, which will disappear in course of time.

AQUEOUS SOLUTION OF CHLOROFORM: ITS TOPICAL USES IN SURGERY.

M. Sauvé, a Parisian pharmaceutist, recommends the aqueous solution of Chloroform as a topical application: and it is probable, that this will be a good form of administering it internally, when inhalation may appear hazardous. M. Sauvé recommends that one gramme of Chloroform be shaken for twenty minutes in 125 grammes of distilled water. The Chloroform becomes dissolved in the water, from which it is not precipitated. In this diluted form, Chloroform preserves its anæsthetic properties, without any of its inconveniences; for pure Chloroform acts violently on the skin. It appears

that numerous Parisian physicians and surgeons have employed the aqueous solution of Chloroform. M. Cazenave has successfully used it in some skin diseases. M. Malgaigne applied compresses, soaked in the aqueous solution of Chloroform, to the uterus of a woman suffering sympathetic pains in the thigh, from neuralgia of the uterine appendages. The patient stated that she experienced relief. M. Jules Roux mentions, that when applied upon the surface of wounds, heat is at first caused, as well as slight pain; but these are soon replaced by a feeling of great comfort. The insensibility of the wound continues for a longer or shorter period, according as it may be recent or not; but the state of anæsthesia never extends to the whole economy. M. Roux alledges, that after having applied Chloroform to a wound, he can cauterize it with nitrate of silver, without producing present or subsequent pain. Upon one occasion, in amputating the first phalanx of the index finger, he threw the patient into a state of insensibility: before proceeding to dress the wound, he sprinkled it with the aqueous solution of Chloroform, and, when the patient became conscious, he did not feel the manipulations of the surgeon. At subsequent dressings, the same system was adopted, so that the patient never experienced any pain from the operation, nor from the dressing of the wound. M. Roux has applied Chloroform after the same fashion, as a local anæsthetic, to the parts in an operation for phimosis and to painful ulcers; and he has likewise used it as an injection into fistulæ and hydrocles.—(*Journal de Méd. et de Chir. Pratiques*, Decembre 1848, p. 642; and Janvier 1849, p. 34.)

Numerous experiments have been made with Chloroform, as a local anæsthetic, by Professor Simpson of Edinburgh, who seems not only to have had the good fortune to introduce this valuable agent into the practice of surgery, but also to be the foremost to illustrate its application in every department of the healing art. Dr. Simpson's paper appeared in the *Edinburgh Monthly Journal* for October 1848. The result of his researches is not, however, nearly so encouraging, as to the advantages of Chloroform as a topical anæsthetic in surgery, as those of the French surgeons above quoted. This may depend upon the latter employing the aqueous solution, in place of the pure drug or its vapour. That the pure Chloroform ought not to be used locally, is apparent from one of Dr. Simpson's conclusions, which we subjoin. He says: "There are few operations in which there is not previously a local broken surface, and the application of Chloroform, etc., to such a surface, would be far too painful to be endured, no small degree of suffering sometimes arising from even the exposure of the unbroken skin to their action."

Mr. Nunnelly of Leeds (*Provincial Med. and Surg. Journal*, June 28, 1848), has instituted an elaborate series of original experiments, from which he infers, that anæsthetic agents may be used with advantage and safety. This gentleman, however, also seems to have been unaware of the superior advantages of the aqueous solution; for he tells us, that the first effects are pain, or redness, heat, and smarting; and that redness and swelling continue after the pain has subsided.

Mr. Spry, surgeon to the Truro Infirmary (*Provincial Journal*, August 28, p. 459), resorted to the local application of Chloroform in the case of a tumour, two inches long and one inch wide, on the sole of the foot. Folded lint, saturated with the Chloroform, was applied to the tumour, and a piece of oiled silk placed over it. In a quarter of an hour, the lint was again moistened with the Chloroform; and, in about half an hour, the patient could bear pressure on the tumour without complaining. The tumour was then removed. The patient declared that he felt only a very trifling pain at the deepest part of the dissection, but none during the division of the skin.

From the above statements, we think that Chloroform may yet become a valuable topical anæsthetic, and prove useful as such, both to the physician and the surgeon. The aqueous solution is the most suitable form yet made known.

OBSTETRICS.

DIGITAL EXAMINATION, AND THE SPECULUM: THEIR USES AND ABUSES.

A feeling against an indiscriminate but too common reliance on the Speculum seems to be gaining strength, both in this country and in France; and we only hope that, while the evils and improprieties connected with the abuse of this instrument are exposed and denounced, the current of professional opinion may not set in too strongly against its employment; for, in a large number of cases, it must be regarded as the only means, through which a correct diagnosis can be obtained. With this introductory remark, we have much pleasure in calling attention to the following admirable observations of M. MALGAIGNE, which form part of a clinical lecture lately delivered at the Hôpital Saint-Louis, of Paris; and which is reported at page 638 of the *Journal de Médecine et de Chirurgie Pratiques* for December 1848:—

"Authors have erred grievously, in describing diseases of the uterus as diseases *sui generis*. They ought to be regarded as simple affections, which, in many cases, are best managed by avoiding all active interference. While admitting the use of the *toucher* and the speculum as aids to diagnosis, I must also state, that they often lead to errors which, without them, might be avoided. A surgeon was consulted by a lady, whom, after examination, digitally and by the speculum, he treated for engorgement of the neck of the uterus. He assured her that the cauterization had cured the disease; nevertheless she continued to suffer. The explanation was this.—He had gone beyond the seat of that disease which was really annoying her. She had inflammation of the follicles of the urethra, whence arose the burning sensation (*cuisson*), and the shooting pain. I passed the solid nitrate of silver, on several occasions, over the affected part; and the pains were cured. Another patient, who likewise had been cauterized for ulceration of the cervix, came to me, complaining of fluor albus, pain and a dragging sensation. I digitally examined this woman, standing; and found the cervix behind, and the body of the uterus in front. It was anteversion of the womb which had caused the engorgement, the fluor albus, and the sympathetic pains. She had been examined when lying on her back, and in this way the anteversion had not been discovered; but, as there was redness of the cervix,—the effect, and not the cause,—ulceration was diagnosed, and cauterized; the principal affection being neglected. Women who suffer from affections of the genital passages, always fancy that they have prolapsus, if they have consulted a midwife, and ulceration of the cervix, if they have been to a doctor. With this class of patients, there is no other description of disease. Yet we know, from experience, that prolapsus is extremely rare. We must receive with reserve the reports of interested parties, both regarding prolapsus and ulceration of the cervix. The patient must be examined in the upright position, or *à croupion*, which is still better, if you wish to make evident a state of anteversion. When this has been made out, you may possibly find engorgement along with it; but bear in mind, that in every woman who has had children, the neck of the womb is twice as large as in a virgin. If the patient complain of a little pain, you are apt to mistake the natural for the morbid engorgement; and if you use the speculum in such a case,—what do you discover? Why, if the woman have borne children, you find abrasions, redness, and such excoriations as you see within the nostrils of a child affected with coryza. These insignificant excoriations assume, in your prejudiced mind, the importance of ulcers; and, deceived by the speculum, the pain complained of, and the white discharge, you unhesitatingly cauterize. This is a department of therapeutics in which great reforms are required."

TREATMENT OF ENGORGEMENT AND ULCERATION OF THE CERVIX UTERI, RECOMMENDED BY M. MALGAIGNE.

In the clinical lecture already referred to, we find M. Malgaigne laying down the following rules: "There is no more propriety," he says, "in cauterizing trifling excoriations of the cervix, than there is for adopting similar treatment in a case of coryza. On the first day, a pencilling with the nitrate of silver would be of real service; but then we are not called sufficiently early to put in practice this method of cure." When engorgement exists, it is inflammatory; and M. Malgaigne attacks it as such. He bleeds, if need be; he enjoins repose, and the application of poultices, during the day, to the hypogastrium. He often finds poultices applied to the interior of the vagina of much benefit. In a patient with an engorgement simulating schirrus, the poultices caused the induration of the cervix entirely to disappear; and thus removed all anxiety as to the nature of the disease. In other cases, they destroyed morbid adhesions between the cervix and vagina. Patients can introduce the poultice for themselves, by carefully enclosing it in a bit of muslin, and giving it a shape suitable to its destination. A patient who could not retain in the vagina a simply emollient poultice, with advantage substituted one made of linseed, mixed with a decoction of poppy heads. As topical applications of this description are troublesome, injections may be used in place of them, during the day. After five or six days of this treatment, the engorgement is generally diminished. A restoration to the normal volume is not to be expected; for when the cervix has once been gorged, it never assumes its original condition. The important point is, that the pain has been got rid of. Some women, when in the recumbent position, are quite comfortable; but whenever they get up, suffer pain, a feeling of weight and dragging, and a desire to make water. In such cases, M. Lisfranc would use the cautery, and confine the patient to the sofa. M. Malgaigne avers, that he has seen patients of this kind so treated during months and years; and who continued to suffer as much as ever on discontinuing the recumbent posture. This pain, which is absent during decubitus, and present when the woman rises up, evidently cannot depend on inflammation, and must be caused by a vicious position of the uterus, resulting from a species of torsion which the organ undergoes when the person is upright. The hypogastric cincture palliates, if it do not cure, such cases; and, by using it, women subject to anteversion can walk without suffering pain.

So much for simple engorgement: but engorgement may be complicated with ulcerations, leucorrhœa, and pains of a different nature from that already considered. These pains are most commonly in the region of the kidneys; they may be considered as symptomatic of neuralgia of the cervix; and can in no way be attributed to dragging exerted by the uterus, as they are felt by the patients both when recumbent and upright. These pains almost never resist three or four bleedings by cupping. When the neck of the uterus is affected with neuralgia, the sympathetic pains are always in the parts above; whereas, when the affection is in the appendages of the uterus, the sympathetic pains are observed in the parts below, as the buttock and thighs. Neuralgia of the cervix, as can be verified by the aid of the *toucher*, causes pains in the abdomen, the mammæ, and dorso-lumbar region, and even simulates neuralgia of the latter.

M. Malgaigne is in the habit of incising, with the bistoury, that part of the neck of the uterus, which is most painful on pressure. The pains, which had radiated from that point to the mammæ, etc., have sometimes disappeared as if by enchantment. As this little operation may present some difficulties in women who have not had children, and as there are other cases in which it may not be suitable, milder means ought in the first instance to be tried. Indigenous aconite M. Malgaigne tried without benefit: but he had better results from that which Double recommended and used, viz., aconite from

the Swiss mountains. In one case, pains in the abdomen and right breast, immediately ceased on its use; but in other cases, the neuralgia only lost its intensity. In a case in which Swiss aconite failed to produce more than temporary benefit, a cure was accomplished by vapour baths. Blisters are sometimes useful. Chloroform dissolved in water is still more beneficial. [Some remarks on the preparation and uses of the aqueous solution of Chloroform will be found at p. 201.]

NEW OBSTETRIC INSTRUMENTS.

In the *Medical Times* of January 13, 1849, p. 235, is a report of the Edinburgh Obstetrical Society, at which Dr. Simpson exhibited "a new obstetric instrument, which, when further perfected, he thought might prove useful in many cases where the short forceps were now ordinarily applied"; and the Belgian *Presse Médicale* for December 31, 1848, contains a lengthened article by M. Thiry on the forceps-saw of Professor Vanhueval of Brussels. "This beautiful instrument", says the writer, "aided by the *geometric pelvimeter* of the same author, evidences not only a progressive advancement in the obstetric art, and the perfection of obstetrical operations, but establishes a complete revolution—*une véritable révolution*—which entirely overthrows the defective practices which have hitherto been so much praised in midwifery." We cannot help feeling the truth of the old adage, that "bad workmen have always bad tools." Good practitioners will do more, and that with less fuss and difficulty, with their old-fashioned short forceps, than others with all their new "appliances and means to boot." Few instruments, and those of simple construction, are required by men who really know their business; but, unfortunately, the chief aim of the instrument makers and designers seems to be, by an ingenious combination of springs, and guides, and guards, to enable a bungling practitioner to play at operating with as little loss of life as possible. Of Dr. Simpson's instrument we are merely told, that it is a concave disc, made to adhere to the child's head on the principle of a school-boy's sucker. Professor Vanhueval's instrument is not described; but we gather from M. Thiry's memoir, that it is a contrivance for breaking up the cranium, and reducing the size of the fœtus in a deformed pelvis—no difficult nor dangerous matter, in the hands of a careful practitioner, even with the common instruments generally in use.—(Abridged from the *Medical Times*, 20th January 1849.)

FORENSIC MEDICINE.

URIC ACID IN THE KIDNEY, ALLEGED TO BE A SIGN THAT A CHILD HAS BEEN BORN ALIVE.

Dr. Virchow, in the Transactions of the Berlin Obstetrical Society, has proposed a sign, to ascertain whether a child has been born alive; or rather, whether it has lived more than two days. The test is to be found in *the absence or presence of uric acid in the kidneys.*[1]

Dr. Virchow wishes to show that the presence of uric acid in the kidney (at once to be detected by the naked eye), is a conclusive proof that the child found dead has been born alive. The ancient anatomists remarked a red or yellowish substance coating the mammillæ of the kidneys of infants, and which modern science has found to be uric acid, and analogous to the calculi sometimes found in the bladder of children. Schlossberger treats of it under the name of "Infractum acidi urici"; and it is easily discovered by making a transverse section of the kidney, when a considerable number of yellowish-brown, and sometimes light yellow, rays of this substance, are seen ramifying from the tubular, and sometimes from the cortical, substance, to the mammillæ. Under the microscope, we make out sometimes solid cylin-

[1] We particularly recommend our readers to peruse a valuable paper by Dr. Schlossberger, the substance of which is given at p. 240 of the Edinburgh Monthly Journal for March 1845.

drical particles, of a yellowish-brown colour, though more frequently these cylinders seem to be not yet formed, or to be broken up into molecules of a darker colour, round or angular, and not unlike the crystals of urate of ammonia. A greater quantity is obtained by pressure. The conclusions of Dr. Virchow, are :—

1. That the deposit is never found in children who have been born dead, or who have died within forty-eight hours after birth.

2. That the deposit is not found, or does not occur, until about forty-eight hours after birth.

3. That the deposit is not generally found later than the twentieth day after birth.

There are, however, exceptions to these rules; for the deposit was, in one case, found on the twenty-ninth day after birth; and Dr. Virchow had not found it in an infant dead on the tenth day; nor in another on the thirteenth; nor in a third on the sixth day. These, however, may be the consequence of disease. The subject is now left in the hands of British observers, who, I trust, will soon determine the value of Dr. Virchow's views.—[Abridged from Dr. Bushnan, in *Medical Times* for January 20, 1849.]

REAL AND APPARENT DEATH.

The doubts which were entertained, during several days, of the reality of death in the celebrated Professor Dieffenbach, induced Dr. Van Henger to seek for some positive method of ascertaining the fact. Starting from the opinion, that the functions of the brain and of the spinal chord may be momentarily paralyzed, whilst those of the ganglionic system persist, Dr. Van Henger concludes that although, to all appearance, life may have ceased, still, if death be only apparent, animal heat will continue to be generated in the organs placed more directly under the influence of the ganglionic system. These organs occupying the abdomen, (if it were possible to ascertain the persistency or the abolition of heat within that cavity), the proof might be obtained of the reality of death, or of the fallacy of external appearances. For this object, Dr. Van Henger has invented a sort of thermometer, appropriate to such researches. The instrument consists of a caoutchouc tube, 60·75 cents. in length (about two feet), closed at one extremity, open at the other. To this extremity, a glass tube, resembling, in shape, a horse-shoe, may be adapted, containing a small quantity of mercury. In order to discover if any heat continues to be developed within the abdomen, the flexible tube should be introduced into the intestines as far as the cœcum, if possible; about six or eight grammes of sulphuric ether (ʒij.) are then poured into the tube, to which the glass instrument is adapted. If any heat persist in the intestines, the evaporation of the ether will cause the mercury to rise in the glass. Under contrary circumstances, the mercury will remain stationary.—[From *Medical Times*, January 20, 1849.]

MATERIA MEDICA AND PHARMACY.

COLLODION: ITS HISTORY, PREPARATION, PROPERTIES, AND MODE OF APPLICATION.

1. History.—Although the employment of Collodion in Surgery has not long attracted notice, it appears that chemists have, for some time, been aware of the solubility of gun-cotton in ether. In the *Annales de Thérapeutique* for September and October 1848, it is stated to be a French discovery; M. Baudin having first communicated it to the *Académie des Sciences* in December 1846. Its solubility in acetic ether was shown by Richner (vide *Chemical Gazette*, February 1, 1847), and also by Schoenbein and Boettler. Schoenbein found that "the solution, when spread on a smooth surface, left a dull white opaque membrane." (*Ibid.* April 1, 1847.) Dr. B. Frank (*Der Mediziner*, as quoted in *L'Union Médicale*, 3 Avril, 1847) employed the solu-

tion in acetic ether, as a dressing for gangrenous sores. The use of Collodion, as a varnish, was illustrated in America, by Dr. C. T. Jackson, in December 1846, or January 1847. The priority of the application of the adhesive properties of this substance to surgical purposes, is claimed by two persons: Dr. H. J. Bigelow, of Boston, and Mr. G. P. Maynard, a medical student of the same place. In the "Report on the Progress of Surgery," by Henry Ancell, Esq., in *Dr. Ranking's Abstract*, vol. viii, p. 265, it is stated that, soon after the commencement of 1847, Dr. H. J. Bigelow, in employing a bottle of the solution as a varnish, "accidentally smeared it on a fresh wound on his fingers. The smarting produced called his attention to the wound, and he endeavoured immediately to rub it off; but it had dried nearly instantaneously, and remained on. The smarting soon ceased; and, when the film was removed, union had taken place." The *American Journal of the Medical Sciences*, for April 1848, announces, that there had lately been shown to the editor, "by a young medical student, Mr. G. P. Maynard, of Boston, a liquid adhesive substance, which he has introduced as a substitute for the common adhesive plaister; and over which it seems to possess many advantages, and to be applicable in many cases in which the latter is not. It is formed by treating cotton with nitric and sulphuric acids, then washing the substance thoroughly, and afterwards dissolving it in pure sulphuric ether." Since these publications, various communications on the properties, mode of preparation, and uses, of Collodion, have appeared in the British and foreign journals.

2. Mode of preparation.—The process described above for the formation of Collodion, by treating cotton with nitric and sulphuric acids, and dissolving the substance in ether, does not appear to have succeeded in the hands of other experimentors. In *L'Union Médicale*, September 7, 1848, M. Malgaigne states, that Messrs. Foy, Dublanc, and Mialhe, had failed in the attempt to dissolve the gun-cotton in ether. M. Mialhe at length succeeded, by treating cotton with nitrate of potash and sulphuric acid, in forming a soluble material. His process is as follows:—

"Powdered nitrate of potash	...	400 grammes
Concentrated sulphuric acid	...	600 —
Carded cotton	...	20 —

"Mix the nitric with the sulphuric acid in a porcelain capsule, then immediately add the cotton, and stir the mixture well with two glass rods for three minutes. Wash it well in water, without pressure; and, when it is completely free from taste, press it strongly through linen, pull it out with the fingers, and dry it by the heat of a stove. Gun-cotton, thus prepared, is not pure; it always contains a certain quantity of sulphuric acid, is less inflammable than good powder-cotton, and leaves a carbonaceous residue, with sulphur, after explosion; but it is soluble in ether, especially if a little alcohol be added. Hence it is this preparation which must be used in the formation of Collodion. To prepare the Collodion, take of:—

"Prepared cotton (*xyloidine sulfurique*)	...	8 grammes
Rectified sulphuric ether	...	125 —
Rectified alcohol	...	8 —

"Introduce the gun-cotton and ether into a well-stoppered bottle, and agitate the mixture briskly for some minutes; then add the alcohol (by degrees), and continue to shake till the whole mass appears homogeneous, and of a syrupy consistence. Pass it through a cloth, strongly pressing the residue, and keep the liquid in a well-secured bottle." It should not be filtered; its efficacy seeming to depend a good deal on some undissolved fibres of cotton left in it, which appear to become entangled during the evaporation of the ether. In *L'Union Médicale* of September 9, M. Mialhe strongly inculcates the necessity, (which had been shown by M. Soubeiran,) of the materials with which it is prepared being free from water; and also, that the parts to which it is applied should be perfectly dry.

3. Properties.—Collodion, in whatever manner procured, (provided attention has been paid to the precautions just mentioned,) is, at first, an opaline adhesive fluid, smelling strongly of ether, and becoming perfectly transparent, by the deposit of a tenacious shreddy material, when at rest. When a layer of this is laid on any surface, a transparent coating is left, by the evaporation of the ether, which possesses, in a marked degree, the properties of *contractility* and *adhesion*, as well as *transparency*, *pliancy*, and *impermeability*. Dr. Bigelow says: "By its powerful contraction upon evaporation, it places the edges of an incised wound in much more intimate contact than is obtained by sutures and adhesive cloth; unites them, by equal pressure, throughout the whole extent of the wound, and maintains them immoveably fixed." In his letter to the *Lancet*, already referred to, Mr. Erasmus Wilson points out its contractile property as producing a local pressure of considerable power, on the surface to which it is applied; and hence he considers it a valuable agent, in the treatment of congestions of external parts of the body. Mr. Maynard proved its strong adhesive powers by the following experiments: "A strap of sheep-skin, glued to the hand by a thin layer of the solution, nine inches long, and one and a half wide, sustained a weight of two pounds. A second strap, attached to the hand by a layer of the substance, nine inches in length, and three in width, sustained a weight of three pounds. A third strap, fixed to the hand by a layer of the liquid, twelve lines square, resisted the force of ten pounds without giving way; and a fourth strap of the leather, glued to the hand by a stratum of the solution, measuring one and three-fourths of an inch in length, and one in width, was not separated from its attachment by the gravity of twenty pounds. These statements may appear incredible; but they are founded on exact and carefully performed experiments, and are true." (*American Journal of the Medical Sciences*, April, 1848.) Its other properties are thus summed up by Dr. Bigelow: "It preserves the wound perfectly from contact with air, being impermeable to the atmosphere; while its adhesion to the skin is so intimate as to prevent the possibility of air entering beneath its edges. The substance remaining in contact with the skin and wound, after the evaporation of the ether, so far as any irritating property is concerned; and this can scarcely be said of any resinous adhesive cloth or preparation." (Mr. Erasmus Wilson considers that, "as a mild stimulant, it is fitted to exert a local alterative action on the congested capillaries of a chronic ulceration, and give activity to the healing process.") "It does away with the necessity for sutures in incised wounds of almost any extent. It is sure to remain in intimate contact with the skin till union is complete; and, being quite impervious to water, and presenting a polished surface, it allows the surrounding parts to be washed without regard to the wound or dressing. It is colourless and transparent; thus permitting the surgeon to witness all that goes on beneath, without involving the necessity for its removal. No heat is necessary for its application; and the presence of a moderate degree of cold is only objectionable, in retarding the evaporation of the ether. It may be made at a trifling cost; an ounce phial, intrinsically worth little, being sufficient for a great number of dressings."

4. Mode of Application.—Dr. Bigelow gives the following directions for the application of Collodion: "For straight incisions, of whatever length, provided the edges can be brought together without great difficulty, it is better to supply the solution in immediate contact with the skin, as follows. The bleeding should be arrested, and the skin thoroughly dried. If the lips of the wound are themselves in contact, the surgeon has only to apply a coating of the solution lengthwise over the approximated edges by means of a camel's hair pencil, leaving it untouched after the brush has passed over it until it is dry, during, perhaps, ten or twenty seconds. This first film will of itself have confined the edges together; but in order to increase the firmness of the support, more must then be applied in the same manner, allowing

it to extend on either side of the incision, half an inch, or more." When the wound gapes, the edges must be held together; and if the wound be long, the Collodion must first be applied to the upper part, and allowed to dry. In such cases, something more than the film of Collodion is required to counteract the tendency of the edges of the wound to separate. For this purpose Dr. Bigelow recommends gold-beater's skin, or oiled silk, which maintains the transparency of the dressing; it should be applied to the wound after the solution has dried and firmly contracted. Lint, or a piece of cloth, or tissue paper, though not transparent, would answer. If, however, adhesion by the first intention be not desired, the Collodion may be laid on transversely like strips of plaster; and one strip should be dried, and have the support of gold-beater's skin, before the rest is applied. Room is thus left for the escape of pus, and for the surgeon to view the progress of the wound. Collodion answers particularly well after the operation for hare-lip, or cancer of the lip, where union by the first intention, and a narrow linear cicatrix, are so desirable. The use of one or two sutures to the mucous surface is not obviated, as this will not permit the Collodion to adhere with sufficient certainty (*Boston Med. and Surg. Journal*, as quoted in Dr. Ranking's *Abstract*, vol. viii, p. 267). Mr. Maynard says, that "in most instances it was employed in conjunction with straps of cotton and sheep-skin, forming with them strong, unyielding, adhesive straps, bandages, and encasements; and, after many experiments, I am convinced that this is the best and most effectual way in which it can be applied as an adhesive agent in surgery." *American Journal*, ut suprà). The following remarks on its use in conjunction with bandages, in the dressing of wounds, occur in the *Annales de Thérapeutique*, Sept. and Oct. 1848, p. 242. When dipped in the Collodion, bandages are apt either to be difficult of removal, or not sufficiently adhesive, from having dried before they can be applied. In small wounds, bandages are unnecessary; but in cases where they are necessary, they should be strongly fastened at each turn, by a layer of Collodion, at the most distant part only; and the free part of the bandages may be sewed, or tied with strings. The adhesive dressings may be softened with Collodion to remove them, and it may be removed from the hands by washing them in ether. Collodion may probably be used instead of starch or dextrine, to a bandage enveloping a limb; or perhaps the limb may be coated with several layers of the solution. Numerous other applications of the substance may be made; and its use to the pathologist or student, in dissections, must be obvious.

DR. MARSHALL HALL'S SUGGESTION FOR A NATIONAL PHARMACOPŒIA.

We hope that the suggestion of Dr. Marshall Hall, for the establishment of an Uniform and Decimal Pharmacopœia, may be taken up by the Colleges and the Government. Were a simple codex adopted (such as that proposed by Dr. Marshall Hall, in the following extract from his article in the *Edinburgh Monthly Journal* of January), much anxiety would be saved to practitioners, and many fatal accidents avoided. We hope that Dr. Hall will keep stirring up the profession and the public, with reference to this reform, till the authorities are made to move.

"It is impossible to look over our Pharmacopœias, without feeling that their complexity and diversity are very serious, as they are very unnecessary, obstacles in the way of the student and practitioner of medicine. As to the student, his memory is taxed to the very utmost, before he can venture to appear before the examining boards. The practitioner is not less 'let and hindered' in his daily career of prescription. An English physician would scarcely know how to prescribe in Edinburgh or Dublin; and even in England he will sometimes find it difficult to prescribe certain important remedies, the hydrocyanic acid for example, in a manner at once efficacious and safe—a difficulty which is increased on the introduction of any new remedy or reme-

dies. In a word, no principle guides us or guards us in this most important department of our art. In order to set forth the defectiveness of our present Pharmacopœias, I need only advert to those preparations each containing opium,—the pulvis cretæ compositus cum opio, the pulvis kino compositus, the pulvis ipecacuanhæ compositus,—not, however, in the same proportion, but in that of one-fortieth, one-twentieth, and one-tenth! It is the object of this very brief paper to suggest such a principle—a principle which will become, I think, of equal utility to the student and the practitioner, and safety to the patient, under all these varied circumstances. It is that of a uniform Decimal Pharmacopœia in all the British dominions.

"The first step to be taken will be to get rid of the varied modes of determining *quantities*. If we would attain accuracy, these must be limited to one, viz., *weight;* all other modes, such as that by *drops*, and that by *measures*, being discarded altogether.

"Our next step is to discard all the confusion, even in regard to weights, which have so long prevailed, especially that between avoirdupois and apothecaries' weight. In vain is one weight cast circular and the other square. I am persuaded that, to this day, one ounce of the one is confounded with one ounce of the other, and this is a confusion between 480 and 437 grains. But let *one grain*, however this may be determined, be the *unit*, and and let the greater weight be *ten, one hundred, one thousand, decem, centum, mille*,—progressive multiples of that unit. Let the officinal preparation of each energetic, and therefore dangerous remedy, solid or fluid, be such, that the medium dose shall be one grain, or more frequently ten grains, or one unit or decem by *weight;* that of others, as the tinctures generally, the infusions, etc., being such, that 100 grains, or nearly ¼ oz. (℥i ℈ij) a centum, 1000 grains (℥ij ℈ij) or a mille, or nearly two ounces respectively, may be at once an efficient dose, yet far from inconvenient. The phials containing each of those distinct *orders* of preparation should be of *proportional* size; and those of each *order* should be arranged together, and distinctly from the rest. Lastly, let the number of grains, or the terms decem, centum, mille, or millia, be written instead of those remains of antique darkness and mystery, ℈i. ℥i. ℥i. Ten grains are about the medium dose of the pulvis ipecacuanhæ compositus. All other important remedies may, like the opium and the ipecacuanha of this preparation, be so mingled with some appropriate inert substance, as to make the medium dose *ten* grains or one *decem*. The medium dose of the officinal preparations, containing the chloride or the bichloride of mercury, of arsenic, of morphia, of hydrocyanic acid, and of strychnine, should, in like manner, be ten grains by weight. The same rule will apply to all the metallic salts, to iodine and the iodides, to the alkaloids, and to every remedy of energy and power. In like manner, the medium dose of the liquor hydrargyri bichloridi, the liquor potassæ arsenitis, the tinctura opii, the acidum hydrocyanicum, should be *ten* grains.

"If now a mistake be made in the hurry of prescription or of composition (and who is infallible?) no fatal or injurious consequence can follow. No one will be afraid of prescribing the ascertained safe or medium dose of the most powerful medicines even; his sanction, in the case of any untoward peculiarity of constitution, being the authorized Pharmacopœia, founded on the experience of the most experienced in the profession. Each practitioner will, of course, judge whether, in the case of the delicate and the young, a minor dose than the medium dose should be first prescribed.

"It may also be a question for careful consideration, what modification of the plan proposed may be required for infants and children? The plan itself will require the alteration and modification of the whole Pharmacopœia; but no great good is ever obtained without a proportionate effort. A principle, at least, will be introduced into our national Pharmacopœia for the first time. There is nothing in this arrangement of the Pharmacopœia to curtail the just freedom of prescription or of commerce, only I would distinguish the pharmacy from the warehouse and the shop."

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Fourth Meeting of Session 1848-49. Tuesday, Jan. 9, 1849.—J. M. Arnott, Esq., F.R.S., President.

Observations on Keloides, with Illustrative Cases. By Erasmus Wilson, Esq., F.R.S.—The author observes, that in no case "is an operation warrantable until every chance of relief by other means has failed." Mr. Wilson had three cases in healthy-looking men; in the first, the disease was developed on the presternal region, and also on the leg; in the second, on the shoulder and gluteal region; in the third, as in the first, on the sternum. It presented itself in the two forms, designated by Alibert *keloide radiciforme* and *keloid cylindracée;* in the first and second cases it gave rise to extreme inconvenience, and to much of the peculiar burning, stinging, and smarting pain which is characteristic of the disease; but in the third, it was extremely reduced in size, having undergone a spontaneous cure.

On a Case of Cheloidea Complicated with a Large Tumour in the Occipital Region. Illustrated with Casts and Drawings. By W. Oliver Chalk, Esq.—The subject of these local affections was G. G—, aged twenty-one, a native of Oxford, admitted into the Royal Sea-Bathing infirmary, August 9th, 1845. After a description of the tumour, and a minute account of the number, form, situation, and appearance of the keloid formations, the author observed, that cheloidea was the name given to this disorder by M. Alibert, in his *Monographie des Dermatoses* (p. 195, second edition), and was first recognized by this writer as being *sui generis*, and classed by him under two heads—"Kelis Genuina," "Kelis Spuria"; the former, "a cancerous affection, characterized by a single excrescence, rarely by more; more or less hard when compressed by the finger; round or square; flattened in the centre, raised at the edges like a circular cushion, (en manière de bourrelet)"; the latter, "the result of the inflammation of cicatrization, after a burn or ulceration; for example, scrofula, or syphilis." The chief interest in G—'s case was derived from the number and variety of forms of the keloid excrescences, which were singularly illustrative of Alibert's description of the malady, and the rapidity with which most of them disappeared, under the general treatment directed to the restoration of the hepatic functions especially, by means of leeches, mercurial alteratives, tonics, etc., persevered in from Sept. 2nd until Oct. 26th. The author learned, that he returned to the Royal Sea-Bathing Infirmary in the spring of 1846, and was then suffering from jaundice and great disturbance of the sensorial functions, together with ulceration and hæmorrhagic tendency of the tumour, which had assumed a malignant character, and that he died in the October following, in London, on his way home to Oxford.

Mr. Macilwain thought that the general health was always deranged.

Mr. Charles Hawkins did not consider this disease a very rare one. Mr. Cæsar Hawkins had fully described it in a lecture, published in the *Medical Gazette*, some years since; and he (Mr. Charles Hawkins) had seen some cases of the disease, certainly more than three. In one of these cases, the patient was a young woman apparently in excellent health; at all events, she looked well, slept well, and ate well. She had suffered previously from some disease of the chest, for which tartar-emetic ointment had been freely used. From the spots left by the pustules, keloides developed itself, and when he (Mr. Hawkins) was first consulted, the patient had six tumours on the chest, varying in size from a sixpence to a half-crown. Lotions of various kinds were applied, but without any effect, and she experienced great incon-

venience from the disease when, in her capacity of cook, she was obliged to be near the fire. She was fearful that the tumours would get larger, and applied to him to have some more effectual remedy applied. He advised her, however, to let the complaint alone, and in this opinion Mr. Cæsar Hawkins concurred. In another case, a man had applied to him with a keloid tumour over the sternum. The growth was removed by the knife, at the earnest solicitation of the patient. From the eschar the disease again presented itself, and was again removed. The third time it returned of a larger size, and no further interference was resorted to.

Mr. B. Phillips had seen two cases, during the last two years, in the Westminster hospital. One of these cases was very similar to the first one related by Mr. Hawkins. The patient was a young woman, sixteen years of age, and in apparent good health. Keloid tumours followed the irritation consequent upon the use of tartar-emetic ointment. She said the growths were painful ; but it was probable she was fearful of the disease interfering with her good looks. She requested that some application should be made to them, to get rid of them. He applied strong acetic acid ; but as this was not successful, at her urgent request, he removed the tumours with the knife. A considerable margin was left, and the parts were attempted to be brought together; but eventually healed by granulation. The patient left the hospital well. In a month, afterwards, however, she returned with similar growths; one being three inches in length, and very like one of the tumours in Mr. Wilson's case. After much pressing, he again operated, leaving a still wider margin, and making no attempt to bring the divided edges of the wound together. The wounds healed by slow granulation. She remained in good health, but small tumours were again developing themselves. In the second case, the patient was a woman, twenty-five years of age, who had seven of these tumours on one mamma, and five on the other. Some of these were as large as a cherry, and of all shapes and sizes. He refused to attempt their removal by the knife ; and to one he applied the chloride of zinc, and it was removed. Through another he made a crucial incision, and applied the potassa fusa to the wound. To another, so incised, he applied the nitrate of silver ; but as soon as the parts in each of these healed, the tumours gave signs of growing again.

Mr. Lloyd did not think the disease very rare. He had seen many similar cases. He recollected one instance of it in a cook, in whom the disease was situated in the leg. She was subjected to a variety of treatment, without benefit, and Mr. Lawrence eventually removed the growth with the knife. The disease never returned. In another case, a woman had a keloid tumour over the sternum, consequent upon the use of tartar-emetic ointment. She applied to various surgeons. Some said, remove it by caustic ; others recommended the knife. He (Mr. Lloyd) advised that neither proceeding should be adopted ; but prescribed a soothing application, to be constantly used. In two years the disease entirely disappeared, and did not return. In another case, no treatment was employed, and the disease eventually got well. He had seen keloid tumours in connexion with malignant disease, in other parts of the body. He thought these growths *generally* malignant ; and, if they ulcerated, would kill. He believed, however, that there was generally something wrong in the constitution, and removal of this formed a chief element in the cure.

Mr. E. Wilson said : As to the rarity of the disease, he thought the discussion had proved it so. The French authors had related twenty-four cases : add to these the cases related to-night, from the great hospitals, and the result would prove the complaint to be rare.

Mr. Chalk also thought the disease was a rare one. He agreed with Mr. Macilwain, that the general health was usually deranged, although the patients might say it was good. Thus, the man G—. said his health was excellent ; but an examination over the hepatic region resulted in a pain, at

that part, for two or three days afterwards. As his general health improved, the disease gradually gave way, and he left the infirmary well. He had since returned, with jaundice; and the disease had reappeared in an aggravated form.

Appendix to a case of "Successful Removal of an Ovarian Tumour complicated with Pregnancy." By H. E. Burd, Esq., Senior Surgeon to the Salop Infirmary.—The case is narrated in the thirtieth volume of the Society's *Transactions*. The subject of the operation became pregnant the year following her dismissal from the hospital; went her full time, and gave birth to a strong male child. She is now again in the full enjoyment of unimpaired health.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Third Meeting of the Session.—Wednesday, January 3.

The President, upon taking the Chair, delivered an interesting address. He expressed his sense of gratitude for the kind feeling of the members of the Society, which had led them to place him in the Chair. The only return he could make was, to exert every effort to promote the objects for which the Society was instituted, viz. assisting in the accumulation and diffusion of medical science, increasing the good understanding and fellowship of the members of the Society, and maintaining the honour and dignity of the profession. He particularly alluded to the great benefit that might be derived from the communication of detached cases, occurring in the ordinary course of practice, together with the exhibition of morbid parts concerned: and in support of his views read an address by Dr. Abercrombie, while he was President of the Society. Communications of the kind alluded to had been occasionally introduced at their meetings, but had never constituted more than a secondary part of the business. The reason of this might have been the existence of a "Pathological Society" in Edinburgh, but as it had some time ago ceased to exist, there could be no objection to their meeting fortnightly instead of monthly; the alternate evenings being devoted to this purpose.[1] In order to maintain the honour and dignity of the profession, they had of late years heard much of contending for Royal Charters and Acts of Parliament; but he must confess, that he altogether distrusted such means, either for elevating themselves, or for keeping down the presumptuous individuals who ventured to undertake the treatment of disease without having passed through the schools. In Mr. Syme's opinion, a College of Physicians or Surgeons has no claim for respect except what is founded upon the character of its members, and the assistance contributed by them to the advance of medical science. He saw no use in attempting to effect a classification of the profession, which the public assuredly always would, and alone could do. Instead of attempting to suppress quackery by penal enactments, he thought the more reasonable course was to elevate the profession in the estimation of the public, so as to satisfy them that it was for their own advantage to avail themselves of services rendered safe and efficient by study and experience, in preference to those of ignorant and designing empirics. Medical practitioners in Edinburgh enjoyed the best opportunities of cultivating their profession, and its collateral branches. They had among them the greatest medical school, not only of this country, but of Europe; which had every prospect of an increasing prosperity, and must give life and energy to every medical institution connected with it. But best of all, they maintained a social position singularly favourable to freedom of sentiment and liberality of conduct, inasmuch as they were not pressed down by *stratum super stratum* of wealth, rank, and title; but practised a profession which stood so high in public respect, as to prevent them, in their social intercourse, from

[1] This suggestion was formally adopted during the evening.

ever suffering that painful sense of inferiority in station which elsewhere had, probably, in no small measure, contributed to the back-slidings of their brethren. He thought that the possession of all these advantages rendered it peculiarly incumbent upon them, to exert every effort in their power for the good of the profession; and he trusted that the Medico-Chirurgical Society would always prove a powerful instrument for this purpose.

Connection between Anæmia and Goitre. By Dr. Begbie.—This paper led to a short, but interesting conversation.

Spontaneous Cure of an Ovarian Tumour. By Professor J. H. Bennett.—In a woman admitted into the Royal Infirmary, the contents of an Ovarian tumour had found its way, by ulceration, into the bladder. The cure was completed by the subsequent application of pressure, so as to cause evacuation by bladder and urinary passages of the contents of the cyst.

MISCELLANEOUS INTELLIGENCE.

Election of Sir D. Brewster to the National Institute of France.—At the sitting of the Academy of Sciences on the 2d of January, Sir David Brewster, who had been for twenty years one of the *fifty* corresponding Members of the Institute, was elected one of the *eight* Associate Members of that body, a vacancy having arisen from the death of the celebrated chemist, Baron Berzelius of Stockholm. The illustrious traveller and philosopher, Baron Humboldt, has long stood at the head of this list. When a vacancy takes place in the list of Associate Members, a Commission, consisting of the President and six Members from different sections, is appointed to select the candidates, and, after discussing their claims, to arrange them in the order of preference. The candidate recommended by the Commission is placed on the first line, and the rest in alphabetic order. Sir David Brewster was unanimously placed on the first line, and was elected by an immense majority. The other candidates were, Baron Liebig, Sir John Herschell, Bart., M. Mitscherlich of Berlin, M. Ehrenberg of Berlin, M. Melloni of Pavia, and some others. The honour thus conferred on the distinguished Scotchman is thus announced in *La Presse*:—

"At the sitting of the Academy of Sciences on the 2d January, Sir David Brewster was elected one of the eight foreign Associate Members of the National Institute of France, vacant by the death of the celebrated chemist, M. Berzelius. This honour, coveted by the most illustrious philosophers of Europe, and of the whole world, is conferred by the Academy only after a rigorous examination of the scientific claims of the candidates, who are proposed to the Institute by a Commission of five Members, of which M. Arago was on this, as on former occasions, the reporter. The *eight* Associate Members of the Institute are generally regarded as the eight greatest celebretés in the learned world. We shall soon give a detailed account in this journal of the discoveries of Sir David Brewster, who, from the Kaleidoscope to the law of the Angle of Polarization, the physical laws of metallic reflections, and the optical properties of crystals, is the author of an immense number of facts and practical applications, in every branch of optics."

Cholera at the Pauper Children's Establishment, Tooting.—The occurrence of Asiatic Cholera among the children in Mr. Drouet's Establishment for Poor Children, at Tooting, containing 1400 inmates, has excited much attention. Cases of diarrhœa seem to have occurred to a greater extent than usual for two or three weeks; but these did not attract notice, until, on Friday the 29th of December, several of the cases assumed the form of cholera. Measures were promptly taken for arresting the progress of the

disease, by removing numbers of the children to the different parishes from which they had been sent, and by increasing the medical staff of the establishment. Mr. Grainger visited the institution, by order of the Board of Health, and made an elaborate report, condemnatory of the overcrowded, ill-fed, and badly-clothed state of the children, as well as of the inefficient attendance of nurses, and the defective supply of pure air—there being sources of malaria in the neighbourhood. Mr. Carter, coroner for East Surrey, declined to hold any inquest on the children who died at Tooting, alleging that the cause of death was known ; but lengthened inquests have been held by Mr. Wakley, or by the deputy-coroner, Mr. G. J. Mills, on those who have died after removal to the St. Pancras Workhouse, Royal Free Hospital, and other places. The general tone of the verdict has been condemnatory of the conduct of Mr. Drouet, and of the guardians of the unions who placed their children under his care, without sufficiently inquiring into the accommodation and treatment they were likely to receive, or taking measures to remedy it, when it appeared faulty. In the case of four children belonging to the Holborn Union, who died at the Royal Free Hospital, the jury have returned a verdict of manslaughter against Mr. Drouet ; together with a censure on the conduct of the authorities of the Holborn Union. The farming of pauper children at starvation prices, is a system so atrocious, as to demand immediate suppression by the Executive. Poor-law guardians have been long ago proved to be ignorant of what common humanity would dictate to other people. Their proceedings, within the last few years, have done much to disgrace the national character. The total number of cases which occurred at Tooting, up to the 20th of January, since which no fresh cases have been reported, is 360, of which 150 terminated fatally ; at St. Pancras, 180 cases, and 10 deaths ; at the Royal Free Hospital (Holborn), 30 cases, and 4 deaths ; at the Strand Union, 25 cases, and 2 deaths ; among the children from the Islington Union, at Hackney, 30 or 40 cases, and 4 or 5 deaths ; at Kensington, about 20 attacked, and 1 death. At the Wandsworth and Clapham Unions, a large number have been attacked ; and at St. Mary's, Newington, a similar state of things has existed. And thus it appears that from 700 to 800 children, or more than half the number in Mr. Drouet's establishment, have been attacked with cholera, and in about 200 cases it has terminated fatally.

The Serpentine.—A meeting of numerous respectable inhabitants of Chelsea and the vicinity of Hyde Park, took place at the Literary Institution, Cadogan Gardens, on the 16th of January. Dr. Copland in the chair. A deputation, consisting of the Chairman ; Mr. Lilwall, the Honorary Secretary; Dr. J. A. Wilson, Senior Physician to St. George's Hospital; Drs. Goolden, Hodgkin, Pettigrew, Lancaster, Tilt, Messrs. Woolley, Embling, etc., were appointed to form a deputation to wait upon the Commissioners of Woods and Forests, on an early day, to represent the noisome condition of the Serpentine, and to learn what plans the Commissioners proposed to adopt for remedying the evil. The same gentlemen will also form a permanent Committee, entrusted with watching the progress of the measures intended to be put in force. Amongst the votes of thanks passed, was one to the Editor of the *Lancet*, in just acknowledgment of the services rendered by that journal, in the endeavour to effect an alteration in the present condition of the Serpentine.

Appointments.—Dr. John Topham has been elected Physician, and E. F. Dehane, G. Edwards, and J. T. Cartwright, Esqs., Surgeons, to the South Staffordshire General Infirmary, Wolverhampton.

Mr. Heane was elected Surgeon to the Suffolk General Hospital, Bury, on Jan. 16.

Dr. G. S. Jenks has been elected Physician to the Sussex County Hospital, Brighton, in the room of Dr. Blair, resigned.

M. Berard, Professor of Physiology at the Faculty of Medicine, Paris, has been appointed Dean of the Faculty, in the room of M. Bouillaud, who has been superseded.

M. Velpeau has been elected President, M. Bricheteau, Vice-President, and M. Gibert, Secretary, of the Académie de Médecine, Paris, for the year 1849.

Matthew Talbot Baines, Esq., has been appointed Poor-Law Commissioner for England, in the room of the late Charles Buller, Esq.

John Flint South, Esq., the Translator of *Chelius's Surgery*, and one of the Surgeons of St. Thomas's Hospital, has been elected a Member of the Court of Examiners of the Royal College of Surgeons in England, in the room of the late Samuel Cooper, Esq.

William Fergusson, Esq., F.R.S., Professor of Surgery in King's College, has been elected Consulting Surgeon to the Hospital for Consumption, in the room of Mr. Liston, deceased.

John Bleeck, Esq., has been appointed Surgeon to the Bristol Gaol, in the room of George Hetling, Esq., resigned.

Samuel Gaskell, Esq., F.R.C.S., late Superintendent of the Lancaster County Lunatic Asylum, has been appointed, by the Lord Chancellor, a Commissioner in Lunacy, in the room of the late Dr. Prichard.

M. Boussingault has been appointed, in rotation, President of the Académie des Sciences, Paris; and M. Duperrey, Vice-President, for the year 1849.

Obituary.—January 4, aged 41, William Pares Baker, Esq., surgeon, of Bow, Middlesex.—Jan. 9, at Colchester, aged 57, William Byass, Esq., surgeon, late of Worthing.—Dec. 5, at his residence in Wimpole-street, Dr. Clendinning, F.R.S., in the 51st year of his age.—Dec. 2, at Shepperton, Middlesex, aged 67, Samuel Cooper, Esq., F.R.S., late President of the Royal College of Surgeons, and Professor of Surgery in University College, London.—Dec. 20, at Brighton, aged 66, Dr. George Drysdale, R.N.—At Glasgow, suddenly, while actively engaged in attendance on cholera patients, Dr. Gray.—Dec. 19, at Cheltenham, aged 77, William Greaves, Esq., M.D., late of Mayfield Hall, in Staffordshire.—Dec. 29, in Finsbury Square, aged 68, William Martin, Esq., surgeon, R.N.—Dec. 26, at Oxford, Charles Lewes Parker, Esq., M.A., surgeon to the Radcliffe Infirmary.—Jan. 14, in Portland Road, aged 56, John Pratt, Esq., surgeon.—Dec. 22, in Russell Square, aged 62, Dr. James Cowles Prichard, one of the Commissioners of Lunacy, and author of the "Physical History of Man," and other works.—Dec. 20, aged 49, Thomas South, Esq., of Judd-street, Brunswick Square.—Lately, at Dumfries, of cholera, Dr. Templeton, late of Annan.—Dec. 30, at Altrincham, Cheshire, aged 66, Samuel Hibbert Ware, Esq., M.D., F.R.S.E., etc.—At St. Petersburg, aged 92, Dr. Zagorski, member of the Academy of St. Petersburg, and Professor of the Medico-Chirurgical Society. He was celebrated for his attainments in anatomy and physiology.

BOOKS RECEIVED.

Allen's Plain Directions for the Prevention and Treatment of Cholera. Oxford: 1848.—Clendon on Chloroform in Dental Surgery. London: 1849.—Coleridge on Life. London: 1848.—Duke on Cerebral Affections of Children. Dublin: 1849.—Ellis, Demonstrations of Anatomy. Part I; 2nd edition, re-written. London: 1848.—Gillkrest, Cholera Gleanings. Gibraltar: 1848.—Johnson, Ren, from Todd's Cyclopædia. London: 1848.—Jones (William) on Diseases of Women, with Description of a Novel Invention. London: 1848.—Mayne on Scientific Nomenclature. London: 1849.—Medical Directory for 1849. London: 1849.—Milroy, Cholera not to be arrested by Quarantine. London: 1847.—Rogers on Cholera. London: 1848.—Skiers on Diarrhœa, Dysentery, and Cholera. London: 1849.—Tomes on Dental Physiology and Surgery. London: 1848.—Transactions of Provincial Medical Associations. Vol. xvi. Part I. 1848.